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AGRICULTURAL RESEARCH INSTITUTE
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A
CATALOGUE

OF

THE MANTODEA,

WITH

DESCRIPTIONS OF NEW GENERA AND SPECIES, AND AN ENUMERA-
TION OF THE SPECIMENS, IN THE COLLECTION
OF THE INDIAN MUSEUM, CALCUTTA.

BY

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OF THE MICROSCOPICAL SOCIETY OF CALCUTTA; VICE-PRESIDENT OF THE
ARIATTO SOCIETY OF BENGAL: &C.

No. 1, pp. 1-48, with 34 Woodcuts.



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Order ORTHOPTERA.

Family MANTODEA, Burmeister.

All the species have, on the inner face of each fore femur, towards the apex, near the lower margin, a small and slightly convex space clothed with close-set short setae forming a pair of brushes (*see* Stål, *Öfvers. af Kongl. Svenska Vetenskaps Akademiens Förhand.* Stockholm 1871, no. 3, sid. 382, in footnote, and Wood-Mason, P. A. S. B. 1876, p. 123, A. & M. N. H. 1877, ser. 4, vol. xix, p. 268)—the femoral brushes—which are used for cleaning the eyes and stemmata (Wood-Mason, P. A. S. B. 1876, p. 176).

Grade A. PROMANTODEA, Wood-Mason.

Proteromantina, Wood-Mason, A. & M. N. H. 1877, ser. 4, vol. xx, p. 77.

Mantodea with the tibial element of the rap-torial subchelæ simple, or armed on the ventral surface at most with a row of sharp spine-shaped retentive granules.

It appears probable that in the species included under this head a stage in the evolution of the Mantodean subcheia is represented.

Subfamily I. AMORPHOSCELIDÆ, Stål.

Syst. Mant. 1877, p. 6.

Genus I. **PAROXYPILUS**, Saussure, Stål.*Paraoxyphilus*, Saussure, Mél. Orthopt. 1870, t. i, p. 301.*Haania*, Saussure, Mél. Orthopt. 1872, t. ii, p. 74 (*ex parte*).*Phthersigena*, Stål, Öfv. Vet. Akad. Förh. 1872, p. 401.*Paraoxyphilus*, Stål, Syst. Mant. 1877, p. 7.*Distribution.* Australia and Tasmania.1. *Paroxyphilus kraussii*, (Saussure).*Haania kraussii*, Saussure, Mél. Orthopt. 1872, t. ii, p. 75, pl. ix, figs. 26, 26a, ♀.*Paraoxyphilus kraussii*, Stål, Syst. Mant. 1877, p. 8.

♂. Smaller and slenderer. Ocelli placed as in the female, but, as usual in males, much larger. Median keel of pronotum not developed into a triangular laminar lobe at either end. Organs of flight thinly membranous, extending, when closed, by about a fourth of their length beyond the extremity of the abdomen: the tegmina semi-transparent, whity-brown, with a narrow and very gradually tapering dark-brown band extending from the base for nearly three-fourths of the length of the organs in the mediastinal area; the wings almost perfectly pellucid, being scarcely clouded with whity-brown and having the anterior margin very faintly brownish. Abdomen sublinear, with the apex tapering.

Length of body 23; length of pronotum 4.5; breadth of pronotum at supra-coxal dilatation 3.0; length of tegmina and wings 20, breadth of tegmina 5.5 mm.

Habitat. ♀, Northern Australia (Stål), Swan River (Saussure); ♂ ♀, Trinity Bay, Australia.

No. $\frac{2034}{2}$. An adult male, in spirits, from Trinity Bay. Presented by C. French, Esq.

The wings of one side have been mounted for examination under the microscope.

No. $\frac{581}{1}$. Two adult females, one nymphal male, and one nymph, sex indeterminable, in spirits, from Trinity Bay. Presented by C. French, Esq.

2. *Paroxyphilus lobifrons*, Stål.*Paraoxyphilus lobifrons*, Stål, Syst. Mant. 1877, p. 8.*Habitat.* Queensland (Stål).

3. *Paroxypilus tasmaniensis*, Saussure.

Paroxypilus tasmaniensis, Saussure, Mém. Orthopt. 1870, t. i, p. 303, pl. 6, figs. 49, 49a, ♀, 50, ♂.—Stål, Syst. Mant. 1877, p. 9.

Habitat. Tasmania (*Saussure*); Australia (*Stål*).

No. $\frac{4324}{4}$. An adult male, dry, from Adelaide, South Australia. Professor Westwood (E.).

No. $\frac{4538}{4}$. An adult male, dry and disarticulated, and mounted for examination under the microscope, from Swan River, Australia. Purchased.

No. $\frac{4537}{4}$. An adult male, dry, from Swan River, Australia. Purchased.

No. $\frac{4538}{4}$. An adult male, dry, from Van Diemen's Land (*Ewing*). Presented by J. Wood-Mason.

No. $\frac{4325}{4}$. An adult female, dry, from Swan River, Australia. Professor Westwood (E.).

No. $\frac{4539}{4}$. An adult female, dry, from Australia. Presented by J. Wood-Mason.

No. $\frac{4540}{4}$. An adult female, dry, from Victoria Mountains, Australia. C. French, Esq. (E.).

4. *Paroxypilus verreauxii*, Saussure.

Paroxypilus verreauxii, Saussure, Mém. Orthopt. 1870, t. i, p. 305, ♂, et 1872, t. ii, p. 77, ♀.—Stål, Syst. Mant. 1877, p. 9.

Habitat. Tasmania and N. Australia (*Saussure*); Queensland (*Stål*).

5. *Paroxypilus conspersus*, Stål.

Phthersigena conspersa, Stål, Öfv. Vet. Ak. Förh. 1872, p. 401, ♂.

Haania conspersa, Saussure, Mém. Orthopt. 1872, t. ii, p. 76, ♂.

Paroxypilus conspersus, Stål, Syst. Mant. 1877, p. 9.

Habitat. Cape York, N. Australia (*Stål* et *Saussure*).

Genus 2. **DISCOTHERA**, Bonnet & Finot.

Bull. Ent. Soc. Fr. (6) iv, 1884, xxvi.—Rev. d. Sc. Nat. Montpellier, 1885, 3me sér., t. iv, pp. 202-10, pl. vii, figs. 1-6, ♀.—An. Soc. Esp. Hist. Nat. xv, p. 262.

Distribution. North Africa.

6. *Discothera tunetana*, Bonnet & Finot.

Op. et loc. cit.

Habitat. In sandy places near Kheruan, Tunis.

Genus 3. *AMORPHOSCELIS*, Stål.

Stål, Öfv. Vet. Ak. Förh. Stockh. 1872, xxviii, p. 401, ♂?—Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 21, ♀.

Stål's diagnosis, having been drawn up from a specimen which had lost its abdomen, is incomplete. This part is long and almost linear, tapering only very slightly and gradually towards the extremity, which extends somewhat beyond the closed

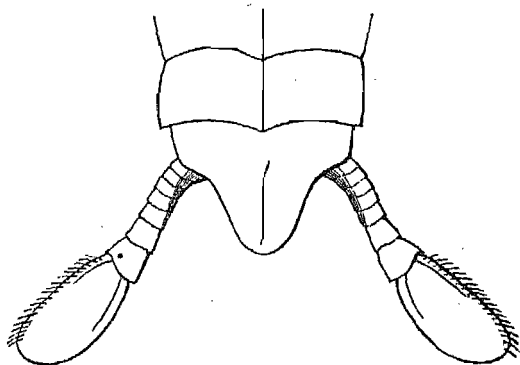


Fig. 1, three terminal abdominal somites of ♀ nymph, from above, × 18.

organs of flight in the living insect; its last tergum, or supraanal plate, may be described as a roof-shaped blunt-pointed triangular plate with the opposite sides hollow and nearly as long as it is broad at the base. The cerci have a remarkable form. They are racket-shaped organs of 8 joints, the five basal of which are cylindrical, the two penultimate are compressed and subfoliaceous, and the last is expanded into a large and thin oval plate.

Distribution. India.

7. *Amorphoscelis annulicornis*, Stål.

Öfv. Vet. Ak. Förh. Stockh. 1872, xxviii, p. 401.—Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 21, ♀.

This species abounds in Calcutta on the trunks of trees, to the bark of which it is so perfectly adapted in colour that it is

only to be detected with the greatest difficulty, and then only after

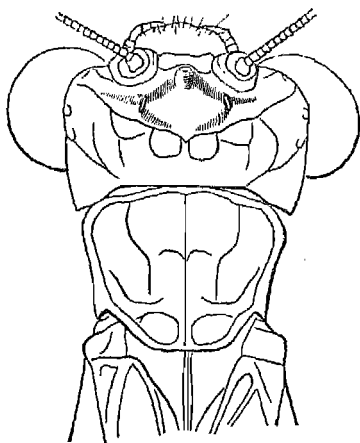


Fig. 2, head and pronotum of ♀, from above, $\times 10$.

it has been startled into activity by a sharp blow administered to the tree trunk on which it may be resting. Its gait resembles that of many cockroaches, or better that of *Machilis maritima*, or the Rock-slaters. Its rapid darting movements render it very difficult of capture in perfect condition, the legs, and the thin oval plate which terminates the caudal appendages, being particularly fragile.

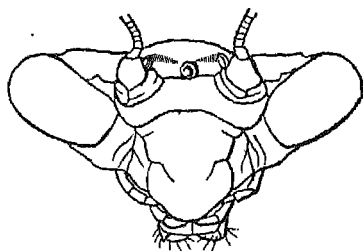


Fig 3, head of ♀, from in front, $\times 10$.

It is possible that the form of the caudal appendages may be correlated with the curious habit the animal has when alarmed of waving or wagging its abdomen from side to side as if for the purpose of beating off foes, which may be the ichneumon-

flies, the ants, or, as has been suggested to me by Mr. de Nicéville, the protectively-coloured spiders that frequent the same trees.

Habitat. India (*Stål*); Nazeerah, Assam (*Wood-Mason*); Calcutta; and Khurda, Orissa.

No. $\frac{9935}{6}$. An adult male and female, in spirits, from Calcutta. Collected by Moti Ram, Mus. Coll.

Figs. 1 and 2 have been drawn from the latter of these specimens.

No. $\frac{9907}{6}$. Fifteen nymphs of different stages, in spirits, from Calcutta. Collected by Moti Ram, Mus. Coll.

Fig. 3 has been drawn from a full-grown nymphal female of this series.

No. $\frac{9908}{6}$. An adult male, dry, with wings extended, from Calcutta. Collected and presented by L. de Nicéville, Esq.

No. $\frac{9909}{6}$. An adult male, dry, with wings closed, from Calcutta. Collected and presented by J. Wood-Mason.

No. $\frac{7752}{5}$. An adult female, dry, from Calcutta. Collected by Moti Ram, Mus. Coll.

No. $\frac{9911}{6}$. An adult female, dry, with wings extended, from Calcutta. Collected and presented by J. Wood-Mason.

No. $\frac{9912}{6}$. An adult female, dry, with wings closed, from Calcutta. Collected and presented by J. Wood-Mason.

Nos. $\frac{9913}{6}$, $\frac{9914}{6}$, and $\frac{9915}{6}$. Three adult females, dry, from Calcutta. Collected by Moti Ram, Mus. Coll.

No. $\frac{9916}{6}$. A dried nymphal female from Calcutta (*J. de N.*). Presented by L. de Nicéville, Esq.

No. $\frac{4535}{4}$. An adult female, dried, from India, (*C. D. E. Fortnum*). Professor Westwood (*E.*).

No. $\frac{4303}{4}$. An adult female, in spirits, from Nazeerah, Assam. Collected and presented by the late Dr. J. M. Foster.

No. $\frac{9917}{6}$. An adult female, dry, from Khurda Plains, Orissa. Collected and presented by W. C. Taylor, Esq.

No. $\frac{9922}{6}$. An egg-capsule, formed in captivity by a specimen captured at Calcutta, dry. Presented by J. Wood-Mason.

Genus 4. **COMPSOTHESPIS**, Saussure.

Compsotthespis, Saussure, Mém. Orthopt. 1872, t. ii, p. 64.

Distribution. Australia and South Africa.

8. *Compsothespis anomala*, Saussure.

Op. et loc. cit., pl. 8, figs. 13, 13a, and 13b, ♀.

Habitat. Cape of Good Hope (*Saussure*).

9. *Compsothespis australiensis*, n. sp.

♀. Body bacilliform, very slender, about 20 times as long as it is broad in its widest part.

Head much compressed, longer than broad, elongate-pentagonal, horizontal; the vertex greatly prolonged above the eyes and broadly concave-truncate, with its angles obtuse. Eyes without a trace of an ocular spine. Clypeus with a ridge interrupted in the middle between its second and apical thirds. Facial shield

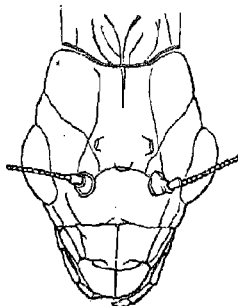


Fig. 4, head with front end of pronotum of ♀, from above, $\times 10$.

scarcely distinguishable from the forehead, transverse, with a faint longitudinal depression on each side of the middle line. Ocelli minute. Antennæ very finely setaceous. Forehead traversed by two grooves, commencing quite close to the vertex and extending to the bases of the antennæ.

Prothorax long, slender, subcylindrical, of almost completely uniform width throughout, a just perceptible supra-coxal dilatation and the prominence of the edges of the anterior lobe of the pronotum alone slightly breaking the uniformity of its width. Pronotum tolerably thickly and minutely granulated, bearing a fine raised median dorsal line, and having the edges of its posterior lobe folded in close to the sides of the prosternum, but those of its anterior lobe salient; its anterior margin broadly arched in the middle, and narrowly and shallowly emarginate on each side, for the reception of the vertex; its supra-coxal dilatation feeble, scarcely perceptible. Prosternum almost as convex as the pronotum, but less distinctly and less thickly granulated.

Organs of flight narrow, coloured, reaching, when closed, to the middle of the apparent third (real fourth) abdominal somite; the tegmina opaque-brown, except at the posterior apex, where they are pale and semi-opaque; the wings without anal notch, with the base and the whole anterior area (except a wedge-shaped space at apex corresponding in shape and colour to the pale part of the tegmina) opaque Indian red, the rest of the organs being fuscous, broken up in the apical half into an obscure tessellation by the pale margins of the transverse veinlets.

First pair of legs slender, weak, and short; the coxæ not quite half the length of the prothorax, slightly curved, flattened and slightly excavated for the reception of the femora above, and enlarged at the two ends, but especially at the distal end, which is semi-circularly emarginate between its two lobes for articulation with the trochanter; trochanter black-brown; the femora having their upper margin straight and transversely convex, and hence appearing almost as thick when viewed from above as they do when viewed from the side; they have a brown stripe on the inside extending from the base to the ungual groove, which is placed very nearly at the end of the second third of their whole length; the basal unarmed half of their lower surface is blunt, with a faint groove extending obliquely across it from within, or from the discoidal spines, outwards, for the reception of the tarsus, and with a ridge diminishing basewards in continuation of the flattened outer armed ridge; there are three discoidal spines, of which the second is about three times the size of the proximal, and the distal, separated from the second by a distance equal to the length of the latter, is little more than half the size of the proximal; the outer margin bears three minute black-brown spiniform tubercles, and a small forwardly sloping black-brown spine seated on a slight eminence a short distance in front of the second discoidal spine; the inner margin is slightly arched and bears five similar minute black-brown spiniform tubercles only. Tibiæ very short, simple and unarmed, terminated by a moderate-sized claw. First joint of the tarsi longer than the rest taken together.

Intermediate and posterior legs long and filiform with the first joint of their tarsi shorter than the rest taken together.

Abdomen bacilliform, a little wider than the prothorax; supraanal plate moderately large, truncated triangular, broader at the base than long. Cerci foliaceous, tapering to a point, scarcely extending beyond the extremity of the abdomen, composed of four joints, the edges of which are straight, not curved so as to give festooned outlines to the organs.

Length of body 55; length of prothorax 15.5, breadth at dilatation 1.9; length of tegmina 18, breadth 3.25, length of wings 17, breadth 6.5, length of abdomen 26, breadth 2.5, length of fore

coxa 6·5, femur 6·5, intermediate femur 11·5, tibia 12·5, posterior femur 16, tibia 18.

Closely allied to the preceding, from which it differs in having no vestige of an ocular spine, in its coloured wings, carinated pronotum, pointed cerci, much greater size, etc.

No. $\frac{4323}{4}$. An adult female, dry, from Australia. Professor Westwood (E.).

Grade B. EUMANTODEA, Wood-Mason.

Hysteromantina, Wood-Mason, A. & M. N. H. 1877, ser. 4, vol. xx, p. 76.

Mantodea with the tibial element of the raptorial subchelæ armed on each side of its flat or grooved ventral surface with a decreasing series of slanting sharp spines, which may be reduced to the one of the outer series that arises at the level of the insertion of the tarsus.

The reduction of the tibial spines that obtains in a few species of the subfamily *Mantidæ* is possibly of the nature of a reversion to the more primitive form of subchela presented by the members of Grade A.

Subfamily II. EREMIAPHILIDÆ, Stål.

Syst. Mant. 1877, p. 6.

Genus 5. METALLEUTICA, Westwood.

Westwood, Zool. Journ. 1832-34, vol. v, p. 441.—Burmeister, Handb. d. Entom. 1838, 2^{te} B., 2^{to} Abth., S. 526.—Saussure, Mém. Orthopt. 1872, t. ii, p. 389.—Stål, Syst. Mant. 1877, p. 10.

The members of this genus are said to live on the bark of the boughs of large trees, with the legs outspread, like those of many spiders, all ready to move on the slightest alarm, and to elude capture by darting with the greatest rapidity from the one side of the bough to the other in a spiral course.

Distribution. Malabar coast of India, and Indo-Malasia from Tavoy to Java.

10. *Metalleutica splendida*, Westwood.

Metallyticus splendidus, Westwood, Zool. Journ., vol. v, p. 442, pl. xxii, fig. 2, ♀; *Arcana Entomol.*, vol. ii, p. 51 (note); *Brit. Cycl.* Nat. Hist., Orthopt. Ins., fig. med. dext.

Metallentica splendida, Burm., Handb. d. Entom. 1838, 2^{te} Bd., 2^{to} Abth., S. 527.—Saussure, Mém. Orthopt. 1872, t. ii, p. 392 (exclus. DeHaan. syn.).

♂. The bronzy metallic green of the female is replaced by violet everywhere, even in the tegmina, which are also of about the same consistence, not being transparent, as in the same sex of the other species.

Habitat. Malabar Coast of India (*Westwood*; *Burmeister*) and Singapore.

No. $\frac{367}{1}$. An adult female, in spirits, from Singapore. Presented by J. Wood-Mason.

No. $\frac{4551}{4}$. An adult male, dry, from Johore, in the Malay Peninsula.

Nos. $\frac{4546}{4}$ and $\frac{4549}{4}$. Two adult females, dry, from Sinkieb, a small island off the N.-E. coast of Sumatra.

Nos. $\frac{4548}{4}$ and $\frac{4547}{4}$. Two adult females, dry, one from Johore, the other from Johore or Sinkieb Island.

Nos. $\frac{4553}{4}$ and $\frac{4554}{4}$. Two nymphs, dry, one female from Johore or Sinkieb Island, the other, sex indeterminable, from Sinkieb Island.

The preceding seven specimens were collected by Moti Ram, Mus. Coll.

11. *Metallentica violacea*, Burmeister.

Metallentica violacea, Burm., Handb. d. Entom. 1838, 2^{te} Bd., 2^{to} Abth., S. 527, ♀.—Charpentier, Orthopt. Desc. et Dep., Tab. 3, ♀, ♂.—Saussure, Mém. Orthopt. 1872, t. ii, p. 391, ♂, ♀.

—*vitripennis*, Burm., loc. cit., ♂.

Mantis chalybea, Serville, Hist. Nat. des Orthopt. 1839, p. 202, ♀.

Metallentica splendida, DeHaan, Bijdragen, etc., Orthopt., p. 83, non Westwood.

Habitat. Java (*Burmeister*, *Charpentier*, *Saussure*, *Serville*), and Tavoy.

No. $\frac{9391}{6}$. An adult male, in spirits, from Tavoy. Collected by Moti Ram, Mus. Coll., under C. E. Fitman, C.I.E.

Nos. $\frac{4550}{4}$ and $\frac{4552}{4}$. Two adult females, dry, from Sinkieb Island and Johore respectively.

Nos. $\frac{4555}{4}$ and $\frac{4557}{4}$. Two nymphal females, dry, from Sinkieb Island and Johore or Sinkieb Island respectively.

The four preceding were also collected by Moti Ram, Mus. Coll.

Genus 6. ANNIA, Stål.

Annia, Stål, Syst. Mant. 1877, p. 10.

Chateessa, Saussure, Mém. Mex., etc., 1871, vol. ii, p. 9 (*ex parte*).

Distribution. South America.

12. *Annia brunneriana*, (Saussure).

Chæteessa brunneriana, Saussure, Mém. Mex., etc. 1871, vol. ii, p. 14, ♂.

Annia brunneriana, Stål, Syst. Mant. 1877, p. 15.

Habitat. Brazil.

13. *Annia burmeisteri*, (Giebel).

Chæteessa burmeisteri, Giebel, Zeitschr. f. gesamt. Naturwissensch. 1862, vol. xx, p. 311.

"Light smoke-grey, without spots; the wings clear, their veins black-brown, and the cross veins only a little lighter; the antennæ, which are longer than the body, black; only the terminal spines of the femora and the ends of the tarsal joints black, the rest of the spines light grey. The eyes are very thick, globular, the stemmata red-brown. On the vertex lie two black brown longitudinal bands. The margin of the pronotum is strongly turned up, and the wings are about a third longer than the abdomen. On the spiny femora of the raptorial legs I count four straight spines, on the tibiæ, seven strongly inclined ones, besides the large terminal claw. Length 9'''."

Habitat. New-Freiburg, Brazil.

14. *Annia tenuis*, (Perty).

Hoplophora tenuis, Perty, Del. Anim. Artic. 1830-34, p. 127, t. 25, fig. 7.

Chæteessa tenuis, Saussure, Mém. Mex., etc., 1871, t. ii, p. 15.

Habitat. Southern Brazil.

Genus 7. *CHÆTEESSA*, Burmeister.

Hoplophora, Perty, Delect. Anim. Artic. 1830-34, p. 126.

Chæteessa, Burmeister, Handb. d. Entom., 1838, 2^{te} Bd., 2^{te} Abth., S. 529.—Saussure, Mém. Mex., etc., 1871, t. ii, p. 9.

Distribution. South America.

15. *Chæteessa filata*, Burmeister.

Chæteessa filata, Burmeister, Handb. d. Entom. 1838, 2^{te} Bd., 2^{te} Abth., p. 528, ♂.—Saussure, Mém. Mex., etc., vol. ii, p. 13, excl. Burm. syn.

Habitat. Siara, Brazil.

16. *Chæteessa valida*, (Perty).

Hoplophora valida, Perty, Del. Anim. Artic. 1830-34, p. 126.

Chæteessa filata, Burm., op. et loc. cit. (*ex parte*).

Chæteessa valida, Saussure, Mém. Mex., etc., vol. ii, p. 13.

Habitat. Southern Brazil.

17. *Chæteessa caudata*, Saussure.

Chæteessa caudata, Saussure, Mém. Mex., etc., 1871, t. ii, p. 11, ♂.
—Miss. Sc. Mex. et Amér. Centr. 1870-79, pt. vi, vol. i, Ins.
Orthopt. p. 230, ♂, ♀.

Probably identical with the preceding, as Saussure has suggested.

Habitat. Brazil.

Mantoida, E. Newman (Ent. Mag. 1838, v), is, according to Professor Westwood (Mod. Class. Ins. 1839, vol. i, p. 413), synonymous with *Hoplophora*, Perty, and must hence be synonymous with the one or the other of the two preceding genera, but with which of the two I am unable to state, not having had an opportunity of consulting Newman's description.

*Species of Doubtful Position.*18. *Chæteessa* (?) *brevialata*, Giebel.

Chæteessa brevialata, Giebel, Zeitschr. f. gesamt. Naturwissensch. 1862, vol. xx, p. 311.

From amber.

Genus 8. **CHÆRADODIS**, Serville.

Chæradodis, Serville, Hist. Nat. des Orthopt. 1839, p. 206.—Burmeister, Handb. d. Entom., 2^{te} Bd., 2^{te} Abth., p. 536.—Saussure, Mém. Mex., etc., vol. ii, p. 16.—Stål, Syst. Mant. 1877, p. 10.—Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 82, et 1884, vol. liii, pt. ii, p. 233, figs. 1—4, nymphs.

Chaurusa, Burm., op. cit., p. 542.

Distribution. India (including Ceylon) and Tropical America.

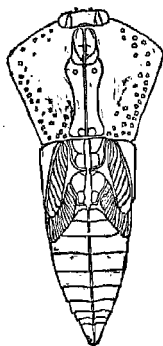


Fig. 5.
Chæradodis cancellata,
♀ nymph.

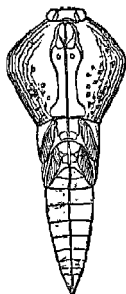


Fig. 6.
Ch. brunneri,
♂ nymph.

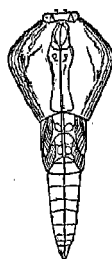


Fig. 7.
Ch. servillei,
♂ nymph.



Fig. 8.
Ch. squilla,
♀ nymph.

The close similarity of these larvæ to one another furnishes a remarkable confirmation of the view that the adults are congeneric. The figures are all of the natural size.

A. Fore femora without a decoy blotch on the inner side.

19. *Chœradodis strumaria*, (Linnæus).

Madame Mérian, Ins. de Surinam, 1726, tab. 27, ♀ et nymph.

Roesel von Rosenhof, Der monatlich-herausgegebenen Insecten Belustigung, 1749, 2ter Theil, Locust., tab. iii, figs. 1 et 2, ♀ et nymph (copied from Mérian).

Mantis strumaria, Linn., Syst. Nat. Ins. 1767, t. i, pt. ii, p. 691, no. 13, ♀.—Fabr., Ent. Syst. 1793, ii, p. 18, no. 21, ♀.

— *cancellata*, Stoll, Spectres et Mantes, pl. xi, fig. 42, ♀ (non Fabr.).

Chœradodis cancellata, Serville, Hist. Nat. des Orthopt. 1839, p. 206, ♀ (non Fabr.).—Saussure, Mém. Mex., etc., 1871, t. ii, p. 19, ♂, ♀.

— *strumaria*, Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 82, ♀; 1884, vol. liii, pt. ii, p. 239, ♂, ♀, fig. 5, ♀.

Madame Mérian was the first to figure a species of this genus. Her figures were named and described by Linnæus, whose description applies to the perfect female insect, his name having obviously been suggested by a fanciful resemblance of the swellings on the sides of the pronotum in the supposed nymph to a series of scrofulous tumours (*strumæ*).

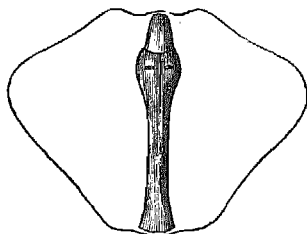


Fig. 9, pronotum of a female, from above, nat. size.

The accompanying outline drawing of the pronotum of a specimen in the Hope Entomological Collection of the University of Oxford when superposed upon the same part of Mérian's figure accurately coincides therewith.

Stoll's figure 42 without doubt represents a specimen of the same species and sex.

Habitat. Cayenne (♀, Serville); Surinam (♀, Mérian, Stoll ♂, ♀, de Saussure).

B. Fore femora with a black decoy blotch on the inner side.

(a.) *The blotch on the lower half of the joint (American).*

In the females of the following three species, the posterior angles of the pronotal expansions are broadly rounded and are not produced backwards beyond the level of the hinder end of the primitive pronotum.

20. *Chæradodis rhombicollis*, (Latreille).

Mantis rhombicollis, Latr. in Voy. de Humb., Zool., Ins., p. 103, pl. 39, figs. 2, 3, ♂.

Chæradodis peruviana, Serville, Hist. Nat. des Orthopt. 1839, p. 207, ♂.

Chæradodis strumaria, Stål, Syst. Mant. 1877, p. 15, ♂, ♀.

Chæradodis rhombicollis, Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 82, ♀, ♂; et 1884, vol. liii, pt. ii, p. 240, fig. 6 ♂, 7 ♀.

—DeBorre, Liste Mant. Mus. Roy. de Belg. 1883, p. 5; et Comptes-rendus Soc. Ent. Belg. Nov. 1883, ♀ et nymph fig.

The blotch commences, in both sexes, near the base of the femur, extends through the ungual groove nearly to the middle of the joint, and is there succeeded by a marginal row of black points in contact with the bases of alternate spines.

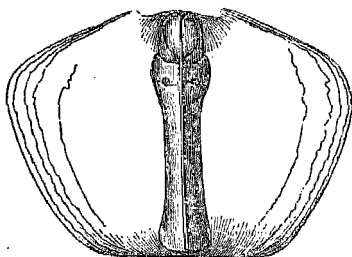


Fig. 10, ♀, nat. size.

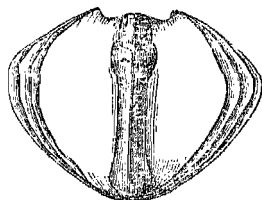


Fig. 11, ♂, nat. size.

Habitat. Guayaquil (♂, ♀, in the Collection of the British Museum); New Granada (♂ ♀, Stål.); Ecuador (♀ et nymph, in Mus. Roy. Belg.).

21. *Chæradodis servillei*, Wood-Mason.

Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 83, ♀ et nymph; et 1884, vol. liii, pt. ii, p. 240, fig. 8 ♀, 3 nymph.

♀. Closely allied to the preceding, from which it differs in

having the marginal field of the tegmina proportionately narrower, and in the smaller size, as well as in the different shape,

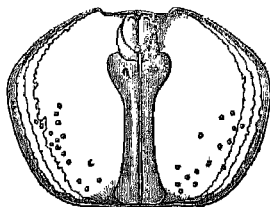


Fig. 12, ♀, nat. size.

of the femoral blotch, which is small and oval, commences just beyond the unguis groove, and is followed by a marginal row of small black points.

Habitat. Cache, Costa Rica, and Chiriqui, Central America.

No. $\frac{4644}{4}$. An adult female, dry, with wings extended, from Cache, Costa Rica (*H. Rodgers*). Presented by Messrs. Salvin and Godman.

Type and figured specimen. Another specimen obtained at the same time is in the collection of Messrs. Godman and Salvin.

No. $\frac{772}{1}$. A nymphal male, dry, from Chiriqui (*Jansen*). Purchased.

Fig. 7 is from this specimen.

22. *Choradodis brunneri*, Wood-Mason.

Wood-Mason, J. A. S. B. 1882, vol. xlix, pt. ii, p. 21, ♀ et nymph; and 1884, vol. liii, pt. ii, p. 241, ♀ et ♀ nymph, figs. 9 ♀, 2 ♀ nymph.

♀. Closely allied to *Ch. rhombicollis* (Latr.) and *Ch. Servillei*, W.-M., differing from both in the size, the shape, and the position of the femoral blotch (which is nearly thrice as long as broad, extends rather further in front of the unguis groove than it does behind it, and is followed by four black puncta, arranged along the lower margin of the joint at the bases of alternate spines), and in having the posterior margin of the pronotum slightly

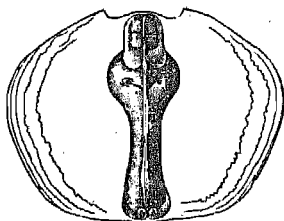


Fig. 13, ♀, nat. size.

convex, instead of concave; from the former in its much narrower, and from the latter in its rather broader, tegmina, and from the latter in the upper margin of its fore femora being coarsely granulated, and sinuous, instead of straight, in which latter respect it approaches the former.

Habitat. Santa Fé de Bogotá, New Granada.

No. $\frac{9918}{6}$. An adult female, dry, from Santa Fé de Bogotá, New Granada. Purchased.

The type and figured specimen of the female.

No. $\frac{1093}{1}$. A nymphal male, dry, from Santa Fé de Bogotá, New Granada (Jansen). Purchased.

Fig. 6 is from this specimen.

In the females of the next two species, and, in all probability, in those of *Ch. rhomboidea* also, the posterior angles of the pronotal lamellæ are rounded-angulate and produced backwards, so that the hinder end of the primitive pronotum projects in the bottom of an angular emargination.

23. *Chæradodis laticollis*, Serville.

Chæradodis laticollis, Serville, Revue, p. 24; Hist. Nat. des Orthopt., 1839, p. 208, pl. iv, fig. 2, ♀.—Saussure, Mém. Mex., ii, p. 20, ♀.—Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 83, ♂, ♀; 1884, vol. liii, pt. ii, p. 241, fig. 10 ♂, 11 ♀.

Chæradodis strumaria, Saussure, Mém. Mex., etc., ii, p. 18, ♂.

laticollis, Stål, Syst. Mant. 1877, p. 17, ♀.

The blotch is situated, in both sexes, just beyond the ungual groove, is oblong-rhomboidal in shape, and is followed by two black points on the bases of alternate spines; there is a fuscous

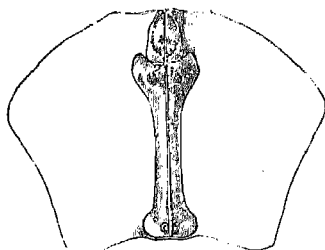


Fig. 14, ♀, nat. size.

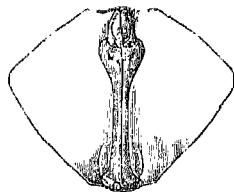


Fig. 15, ♂, nat. size.

speck at the end of the stigmatal spot of the tegmina; and the antero-lateral margins of the pronotal lamellæ are arcuate or convex, especially in the female.

Habitat. Ecuador (♂ ♀, Wood-Mason); Peru (♀, Stål); Cayenne (♀, Serville et Stål); Surinam (♂, Saussure).

Nos. $\frac{6620}{1}$, $\frac{6623}{1}$, $\frac{6624}{1}$, $\frac{6625}{1}$, and $\frac{6626}{1}$. Five adult males, dry, from Ecuador (*Buckley*). Purchased.

The first is the figured specimen.

Nos. $\frac{6615}{1}$, $\frac{6618}{1}$, $\frac{6617}{1}$, $\frac{6621}{1}$, and $\frac{6622}{1}$. Five adult females, dry, from Ecuador (*Buckley*). Purchased.

The last but one is the figured specimen.

24. *Chæradodis stalii*, Wood-Mason.

Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 83, ♂ ♀; id., op. cit. 1884, vol. liii, pt. ii, p. 242, fig. 13 ♂, 12 ♀.

Differs from the preceding in the shape of the blotch (which is pointed at both ends and commences in the unguis groove, and on either side of which the femur is pale luteous-yellow, instead of being clouded with fuscous); in being without a fuscous speck at the distal end of the stigma; in its shorter and

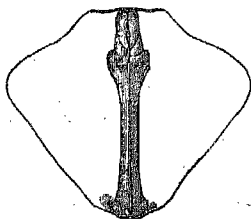


Fig. 16, ♂, nat. size.

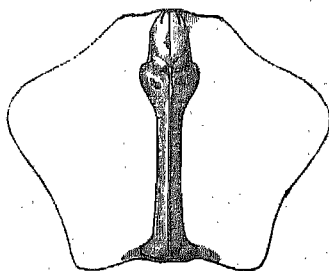


Fig. 17, ♀, nat. size.

differently shaped facial shield; and in having the antero-lateral margins sinuous-concave, and the lateral angles of the pronotal expansions more broadly rounded off.

Habitat. Ecuador (*Wood-Mason*).

No. $\frac{6619}{1}$. An adult male, dry, from Ecuador (*Buckley*). Purchased.

The type and figured specimen of the male.

Nos. $\frac{6612}{1}$, $\frac{6614}{1}$, and $\frac{6618}{1}$. Three adult females, dry, from Ecuador (*Buckley*). Purchased.

The last is the type and figured specimen of the female.

A specimen of the female is in the Hope Entomological Collection of the University of Oxford.

25. *Chæradodis rhomboidea*, (Stoll).

Mantis rhomboidea, Stoll, Spectres et Mantes, pl. xi, fig. 45, ♂.

Chæradodis rhomboidea, Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 84, ♂; et 1884, vol. liii, pt. ii, p. 242.

A male insect from Para, in the British Museum, agrees neither with Saussure's description (*loc. supra cit.*, p. 18), nor with any of the specimens in the Indian Museum; it more nearly approaches Stoll's figure, agreeing therewith in the points in which it differs from the former.

The blotch commences in the ungual groove, thence extending as far along the femur as in the preceding four species, but it is not followed by a marginal row of black points. The pronotal lamellæ have no posterior angles, their postero-lateral margins dwindling away to nothing posteriorly.

Habitat. ♂, Para, in the collection of the British Museum. A nymph, from Ega, in the same collection, probably also belongs to this species.

This species is nearest allied to *Ch. laticollis*.

(β.) *The blotch on the upper half of the joint* (Indian).

26. *Chæradodis cancellata*, (Fabricius).

Mantis cancellata, Fabr., Ent. Syst. 1793, ii, p. 18.

Chæradodis squilla, Lucas, Ann. Ent. Soc. Fr. 1872, 5 ser., ii, p. 32, ♀.

Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 48 (*ex parte*).

Chæradodis cancellata, Wood-Mason, J. A. S. B. 1884, vol. liii, pt. ii, p. 243, fig. 1, nymph.

Pronotum dissimilar in the sexes, being much less dilated in the male than in the female; its antero-lateral and postero-lateral margins not forming an angle at their junction in the female.

Femoral blotch narrower, confined to the foliaceous crest of the joint, and bordered by transparent enamel-like, bright emerald-green.

In the shape and extent of the pronotal expansions, the male of this species much resembles the same sex of *Chæradodis rhomboidea*, differing, however, strikingly therefrom in its much shorter pronotum. The female approaches, and differs from, those of *Chæradodis rhombicollis* and its allies in the same respects.

Habitat. India (*Fabricius*) generally, from Madras (*Lucas*), through Central India [♀, from Saugor (*Hearsey*) in Coll. Hop. Oxon.], to the banks of the Killing River on the N.-E. Frontier.

No. ¹⁰⁹²/_I. A nymphal female, dry, from the banks of the Killing River in the North Khasi Hills, on the North-East Frontier of India. Collected and presented by the late A. W. Chennell, Esq.

Fig. 5 is taken from this specimen.

Obs. A specimen of this species in the British Museum is erroneously labelled "Brazil."

27. *Chœradodis squilla*, Saussure.

Chœradodis squilla, Saussure, Mél. Orthopt., t. i, 1870, p. 161, pl. iv, figs. 3, 3a, ♂ et nymph.—Wood-Mason, J. A. S. B. 1884, vol. liii, pt. ii, p. 243, ♂ ♀, figs. 14 ♂, 15 ♀.

? ————— Lucas, Ann. Entom. Soc. Fr., 1872, 5 sér., t. ii, p. 32, ♀.

————— Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 84 (*ex parte*).

Pronotum less dissimilar in the sexes, its postero-lateral forming with its antero-lateral margin a distinct angle in both; that of the male differing from that of the female only in being rather less expanded, and consequently less convex, postero-laterally.

Femoral blotch broader, extending on to the primitive femur up to the upper end of the ungual groove, and not bordered with emerald-green.

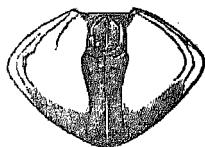


Fig. 18, ♂, nat. size.

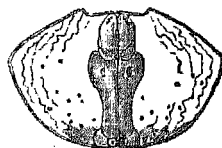


Fig. 19, ♀, nat. size.

In fig. 18 the left lateral angle has been much too rounded off by the engraver; it should be like the right.

It is much more probable that the insect obtained by M. Jansen in the neighbourhood of Madras and described by Lucas as the opposite sex of de Saussure's species is a female of the preceding than of this species.

Habitat. Ceylon.

Nos. $\frac{4545}{4}$. An adult male, dry, with wings extended, from Ceylon.

Fig. 18 is from this specimen.

Nos. $\frac{9919}{6}$. An adult female, dry, from Ceylon.

Fig. 19 is from this specimen.

Nos. $\frac{8423}{6}$ to $\frac{9431}{6}$. A gradational series of four nymphs, dry, from Kottava Forest, near Point-de-Galle, Ceylon.

All the above have been presented by the Trustees of the Colombo Museum.

No. $\frac{202}{1}$. A nymphal female (Fig. 8), in spirits, from Ceylon. Presented by F. M. Mackwood, Esq.

These nymphs all have the femoral blotch of the form and dimensions of the continental species.

Nos. $\frac{9884}{6}$ and $\frac{9885}{6}$. Two adult females, dry, from Udagenna, near Point-de-Galle, Ceylon. Presented by A. P. Green, Esq.

Genus 9. ORTHODERA, Burmeister.

Orthodera, Burmeister, Handb. d. Entom., 1839, Bd. ii, Abth. 2, p. 529.—Saussure, Mél. Orthopt. 1870, vol. i, p. 163.—Stål, Syst. Mant. 1877, p. 11.

Bolidena, Blanchard, Voy. de l'Astrolabe et la Zélée, etc., Zool. 1853, t. iv, p. 356.

Distribution. Australasia.

28. *Orthodera ministralis*, (Fabricius).

Mantis ministralis, Fabricius, Sp. Ins., 1781, vol. i, p. 350, no. 25; Ent. Syst. 1793, vol. ii, p. 22, no. 41.

Orthodera prasina, Burmeister, Handb. d. Entom., 1838, 2^{re} Bd., 2^{re} Abth., p. 529, ♂ ♀.—Saussure, Mél. Orthopt. 1870, tom. i, p. 163.—Wood-Mason, A.&M.N.H. 1877, 4th ser., vol. xx, ♀, p. 76.

Mantis rubrocoxata, Serville, Hist. Nat. des Orthopt. 1839, p. 203, ♀.

— *hobsonii*, Le Guillou, Rev. Zool. Soc. Cuv. 1841, t. iv, p. 293.

Bolidena hobsonii, Blanchard, Voy. de l'Astrolabe et la Zélée, etc., Zool. 1853, t. iv, p. 356, pl. i, fig. 7, ♀.

Paraoxyphilus (?) *ministralis*, Saussure, Mél. Orthopt. 1870, tom. i, p. 306.

Compared with the types in the Banksian Collection.

Habitat. Australia, Tasmania, and (?) New Zealand.

No. $\frac{1095}{1}$. One male and two females, dry, from Swan River, Australia. Purchased.

No. $\frac{1098}{1}$. A dried female from New Zealand. Presented by Professor F. W. Hutton.

Professor Hutton informs me, in a letter to Dr. D. Sharp, that the species of which this is a specimen is only found in one locality (the Dunstan District in Otago, where it is not uncommon), and that from this fact he at one time suspected that it might have been introduced; in which suspicion he is probably correct. The specimen differs from Australian ones in the less dense reticulation of its tegmina.

No. $\frac{579}{1}$. An adult female, in spirits, from North Australia. C. French, Esq. (E.).

29. *Orthodera burmeisteri*, n. sp.

♀. Closely allied to *O. ministralis* (Fabr.), from which it differs in being longer and slenderer, in having the eyes rounded, the fore tibiae armed with 10-13 and 11-13 spines on the inner and outer edges respectively, and the pronotum much less granulated.

Total length 38; length of pronotum 11.75, breadth of pronotum at the anterior angles 5, at base, just behind the termination of the lamellar expansions, 3; length of tegmina 28.5, breadth of tegmina 8, of their marginal field 1.5; length of anterior coxa 8, femur 10; tibia 6.25; intermediate femur 8, tibia 6.25; posterior femur 9.25, tibia 9.5 millimetres.

Habitat. Port Moresby, New Guinea.

No. $\frac{6415}{4}$. An adult female, in spirits, from the above locality. Purchased.

30. *Orthodera marginata*, Saussure.

Orthodera marginata, Saussure, Mél. Orthopt. 1872, tom. ii, p. 8, pl. 1, fig. 1, ♀.

Habitat. Swan River, Australia (*Saussure*).

No. $\frac{580}{1}$. An adult female in spirits from North Australia.

C. French, Esq. (E.).

The tegmina measure 29 mm. in length in this specimen.

No. $\frac{1094}{1}$. A nymphal ♀, dry, from Victoria. C. French, Esq. (E.).

Genus 10. *EREMIAPHILA*, Lefebvre.

Eremiaphila, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 468.

—Serville, Hist. Nat. des Orthopt. 1839, p. 209.—*Saussure*, Mél.

Orthopt., 1870, t. i, p. 36*.

Eremophila, Burmeister, Handb. d. Entom., 1838, ii Bd., 2^o Abth., p. 524.—Stål, Syst. Mant. 1877, p. 12.

Distribution. Deserts of the Mediterranean Region, Arabia, Nubia, Abyssinia, Afghanistan, and Western Sind.

31. *Eremiaphila typhon*, Lefebvre.

Eremiaphila typhon, Lefebvre, Ann. Soc. Entom. Fr., 1835, t. iv, p. 499, pl. xii, fig. 5, ♀ nymph.—*Saussure*, Mél. Orthopt., 1870, t. i, p. 371, figs 55, 55a, ♀, redesc.

Eremophila ehrenbergii, Burmeister, Handb. d. Entom. 1838, ii Bd., 2^o Abth., p. 525, ♀.

The largest species of the genus, distinguished by the ine-

quality of the claws of its feet and by its pronotum not being narrowed posteriorly.

Habitat. Egypt; the oases of the desert; Syria.

32. *Eremiaphila audouini*, Lefebvre.

Eremiaphila audouini(i), Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 452, pl. 12, fig. 1, sex (?).—Serville, Hist. Nat. des Orthopt., 1839, p. 211.—Saussure, Mél. Orthopt. 1870, t. i, p. 372.

Eremophila audouini, Burmeister, Handb. d. Entom. 1838, ii Bd., 2^e Abth., p. 525.

Habitat. Suez, Desert of Oairo, Lower Egypt.

33. *Eremiaphila marchali*, Reiche & Fairmaire.

Eremiaphila marchali, Reiche & Fairmaire, App. Voy. en Abyss. de Ferret et Galinier, 1847, t. iii, p. 421, pl. 27, fig. 5, ♀.—Saussure, Mél. Orthopt., 1870, t. i, p. 373.

Habitat. Abyssinia.

34. *Eremiaphila cerisyi*, Lefebvre.

Eremiaphila cerisy(i), Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 484, pl. xiii, figs. 1, 1a, 1b, ♀.—Serville, Hist. Nat. des Orthopt., 1839, p. 211.—Saussure, Mél. Orthopt., 1870, t. i, p. 373, ♀, redesc.

Habitat. Desert of Luxor, opposite Thebes, Upper Egypt.

35. *Eremiaphila genei*, Lefebvre.

Eremiaphila genei, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 486, ♂, ♀, pl. xii, figs. 2a, 2b, ♂.—Serville, Hist. Nat. des Orthopt. 1839, p. 212. ♂, ♀, pl. 3, fig. 8, ♂.—Burmeister, Handb. d. Entom., 1838, ii Bd., 2^e Abth., p. 525.—Saussure, Mél. Orthopt., 1870, t. i, p. 374, ♂, ♀, redesc.

Habitat. Mount Lebanon, Syria, and Egypt.

36. *Eremiaphila burmeisteri*, Saussure.

Eremophila zetterstedtii, Burmeister, Handb. d. Entom., 1838, ii Bd., 2^e Abth., p. 525.

Eremiaphila burmeisteri, Saussure, Mél. Orthopt., 1870, t. i, p. 376.

Habitat. The deserts of Arabia.

37. *Eremiaphila denticollis*, Lucas.

Eremiaphila denticollis, Lucas, Rev. & Mag. de Zool., 1855, 2^{me} sér., t. vii, p. 103, ♀.—Saussure, Mél. Orthopt., 1870, t. i, p. 376.

Habitat. The desert at some distance from the Oasis of Aghouat, Algeria.

38. *Eremiophila zetterstedtii*, Lefebvre.

Eremiophila zetterstedtii, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 489. pl. xii, figs. 3, 3a, 3b, ♀.—Serville, Hist. Nat. des Orthopt. 1839, p. 212.—Saussure, Mél. Orthopt., 1870, t. i, p. 377, ♀, redesc.

Habitat. Isthmus of Suez, Lower Egypt.

39. *Eremiophila arabica*, Saussure.

Eremiophila arabica, Saussure, Mél. Orthopt., 1870, t. i, p. 378, pl. 7, fig. 56, ♀.—Wood-Mason, J. A. S. B., 1882, vol. li, pt. ii, p. 22, ♂, ♀.

Habitat. Djeddah, Arabia (*Saussure*); Afghánistán; and Western Sind (*Wood-Mason*).

No. $\frac{742}{1}$. An adult female, in spirits, from Western Sind. Collected and presented by the late Francis Fedden, Esq.

The spines of the fore tibiæ are 5-6 outside and 15-16 inside.

No. $\frac{4373}{4}$. Two adult males, in spirits, from Sind (*J. A. W. Murray*). Karachi Museum (E.).

One has 5-5 spines on the outer edges and 13-14 on the inner edges of the fore tibiæ, and the other 5-3 on the outer edges and 13-13 on the inner, with one tibia deformed and only four joints to the tarsus of the same leg.

No. $\frac{1266}{1}$. Four adult females, in spirits, from Sind (*J. A. W. Murray*). Karachi Museum (E.).

These specimens form a pretty regularly decreasing series, measuring about 36·5, 30, 26·5, and 23 mm. in length, respectively. In the first, the spines of the fore tibiæ are 14-14 inside, and 5-4 outside; in the second, they are 14-14 inside and 6-6 outside, and both fore tarsi and the left intermediate tarsus are only four-jointed; in the third, they are 14-14 inside and 5-5 outside; and in the fourth, 14-14 inside and 4-5 outside.

No. $\frac{4591}{4}$. An adult female, dry, from Sind. Presented by J. Wood-Mason.

The tibiæ are armed with 5-5 and 14 15 spines.

No. $\frac{4560}{4}$. An adult male, dry, from the Suliman Range, Afghanistan. Collected and presented by V. Ball, Esq., F.R.S.

Differs only in having the band on the under surface of the tegmina a trifle broader. The tibial armature is 5-5 and 14-14.

No. $\frac{9383}{6}$. An adult female, in spirits, from Sind. Karachi Museum (E.).

The tibial spines are 5-5 and 15-16.

40. *Eremiaphila luxori*, Lefebvre.

Eremiaphila luxori, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 491, pl. xiii, figs. 2, 2a, 2b, ♀.—Serville, Hist. Nat. des Orthopt. 1839, p. 213, ♀.—Saussure, Mém. Orthopt., 1870, t. i, p. 380, ♀, redesc.

Habitat. Desert of Luxor, Upper Egypt.

41. *Eremiaphila bovei*, Lefebvre.

Eremiaphila bovei, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 492, pl. xii, figs. 4, 4a, 4b, ♀.—Serville, Hist. Nat. des Orthopt. 1839, p. 273, ♀.—Saussure, Mém. Orthopt., 1870, t. i, p. 381, ♀, redesc.

Habitat. Desert of Suez.

42. *Eremiaphila hebraica*, Lefebvre.

Savigny, Desc. d'Egypte, Orthopt., pl. 2, figs. 4, 4a, 4b, ♂.

Eremiaphila hebraica, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 501, pl. xi, fig. 2 (copied).—Saussure, Mém. Orthopt., 1870, t. i, p. 382, ♂.

Founded solely on Savigny's figure, which, no doubt, represents a male, as suggested by Saussure; the anterior tibiae being sinuously curved, and the fore femora being armed with long spines on the inner apex, as in the male of *E. hedenborgii*, Stål.

Habitat. Egypt (?).

43. *Eremiaphila savignyi*, Lefebvre.

Savigny, Desc. d'Egypte, Orthopt., pl. 2, fig. 3, ♂, not ♀.

Eremiaphila savignyi, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 494, ♀.—Saussure, Mém. Orthopt., 1870, t. i, p. 383.

From the presence of the two long spines near the apex of the fore femora on the inside, I judge that Savigny's figure represents a male, and not a female, as conjectured by Lefebvre.

Habitat. Egypt.

44. *Eremiaphila brevipennis*, Saussure.

Savigny, Desc. de l'Egypte, Orthopt., pl. 2, fig. 6, ♂.

Eremiaphila brevipennis, Saussure, Mém. Orthopt., 1870, t. i, p. 383, ♂.

Founded solely on Savigny's figure.

Habitat. Egypt (?).

45. *Eremiaphila anubis*, Lefebvre.

Savigny, Desc. de l'Egypte, Orthopt., pl. 2, fig. 2.

Eremiaphila anubis, Lefebvre, Ann. Soc. Ent. Fr., 1836, t. iv, p. 501.—Saussure, Mél. Orthopt., 1870, t. i, p. 384, ♂.

Founded solely on Savigny's figure.

Habitat. Egypt (?).

46. *Eremiaphila khamsini*, Lefebvre.

Eremiaphila khamsini, Lefebvre, Ann. Soc. Ent. Fr., 1836, t. iv, p. 496, pl. xiii, fig. 3, ♀.—Saussure, Mél. Orthopt., 1870, t. i, p. 384, ♀, redeso.

Habitat. Desert of Suez and Desert of Lower Egypt.

47. *Eremiaphila hralili*, Lefebvre.

Eremiaphila hralili, Lefebvre, Ann. Soc. Ent. Fr., 1836, t. iv, p. 497, ♂, syn. excl.—Saussure, Mél. Orthopt., 1870, t. i, p. 385.

Saussure suggests that this may possibly be the male of *E. khamsini*.

Habitat. Desert of Minieh, Lower Egypt, one or two leagues from the Nile.

48. *Eremiaphila nilotica*, Saussure.

Savigny, Desc. de l'Egypte, Orthopt., pl. 2, figs. 1¹, 1², etc., and details, ♀.—Lefebvre, Ann. Soc. Ent. Fr., 1836, t. iv, pl. xi, fig. 1, 3-10, copied from Savigny.

Eremiaphila nilotica, Saussure, Mél. Orthopt., 1870, t. i, p. 386.

Founded solely on Savigny's figures.

Habitat. Egypt.

49. *Eremiaphila kheychi*, Lefebvre.

Eremiaphila kheychi, Lefebvre, Ann. Soc. Ent. Fr., 1836, t. iv, p. 498, nymphs.—Saussure, Mél. Orthopt., 1870, t. i, p. 386.

Insufficiently described.

Habitat. The deserts of Egypt.

50. *Eremiaphila barbara*, Brisout.

Eremiaphila barbara, Brisout de Barneville, Bull. Soc. Ent. Fr., 1854, 3^m sér., t. ii, p. lxx, ♂.—Saussure, Mél. Orthopt., 1870, t. i, p. 386, larvæ.

Habitat. The plateau of Setif, Algeria.

51. *Eremiaphila sabulosa*, Saussure.

Eremiaphila sabulosa, Saussure, Mél. Orthopt. 1870, t. i, p. 387, ♀.

Habitat. Isthmus of Suez.

No. $\frac{6417}{4}$. Two females in spirits from Héliuán, Cairo, Egypt. Collected and presented by Dr. John Anderson, F. R. S., formerly Superintendent of the Indian Museum.

52. *Eremiaphila lefebvrei*, Burmeister.

Eremiaphila lefebvrei, Burmeister, Handb. d. Ent., 1838, ii Bd., 2^{te} Abth., p. 525, syn. excl.—Saussure, Mél. Orthopt., 1870, t. i, p. 388.

An insufficiently described and therefore unrecognizable species.

Habitat. Egypt.

53. *Eremiaphila dentata*, Saussure.

Eremiaphila bovei, Burmeister, Handb. d. Entom., 1838, ii Bd., 2^{te} Abth., p. 525.

Eremiaphila dentata, Saussure, Mél. Orthopt., 1870, pt. i, p. 358, sex (♀).

Founded solely on Burmeister's brief description, "Pronoti margine dentato."

Habitat. Egypt or Nubia.

54. *Eremiaphila petiti*, Lefebvre.

Eremiaphila petiti, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 500, ♀, larva.—Saussure, Mél. Orthopt., 1870, t. i, p. 389.

Habitat. Unknown.

55. *Eremiaphila hedenborgii*, Stål.

Eremiaphila hedenborgii, Stål, Öfvers. Vet. Ak. Förh. 1872, p. 396, ♂, ♀.

Habitat. On the banks of the Bahr el Abiád, Nubia.

56. *Eremiaphila numida*, Saussure.

Eremiaphila numida, Saussure, Mél. Orthopt., 1872, t. ii, p. 6, ♀.

Habitat. The Oasis of Biskra, Algeria.

57. *Eremiaphila aristidis*, Lucas.

Eremiaphila aristidis, Lucas, Bull. Soc. Ent. Fr., 1880, 5^{me} sér., t. x, p. lxxv, ♂, ♀.

Habitat. Isthmus of Suez.

Genus 11. **HETERONYCHOTARSUS**, Lefebvre.*Heteronutarsus*, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 501.*Heteronychotarsus*, Saussure, Mém. Orthopt., 1870, t. i, p. 366.58. *Heteronychotarsus ægyptiacus*, Lefebvre.

Savigny, J. C., Desc. de l'Égypte, Orthopt., pl. 2, fig. 5, ♀, (larva).

Heteronutarsus ægyptiacus, Lefebvre, Ann. Soc. Ent. Fr., 1835, t. iv, p. 503, pl. xiii, fig. B, 1 larva (copied), 2 ♀ adult (not nymph), 2-9 details.*Heteronychotarsus ægyptiacus*, Saussure, Mém. Orthopt., 1870, t. i, p. 367, ♀, redesc.*Habitat.* Libyan Desert, Egypt.Genus 12. **ARIUSIA**, Stål.*Ariusia*, Stål, Syst. Mant. 1877, p. 12.*Distribution.* South Africa.59. *Ariusia conspersa*, Stål.*Ariusia conspersa*, Stål, Syst. Mant. 1877, p. 16, ♀.*Habitat.* Damara, South Africa.Genus 13. **TARACHODES**, Burmeister.*Tarachodes*, Burmeister, Handb. d. Entom. 1838, ii Bd., 2nd Abth., p. 528.—Gerstaecker in von der Decken's Reis. in Ost. Afrika, iii Bd., 2nd Abth., p. 11.—Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 22.*Chiropacha*, Charpentier, T. de, Orthopt. Desc. et Dep. 1841.—Saussure, Mém. Orthopt., 1870, t. i, et 1872, t. ii, ex parte.—Stål, Syst. Mant. 1877, p. 13.*Chiropus*, Saussure, Bull. Entom. Suisse, 1869, t. iii, p. 54, et Mém. Orthopt., 1870, t. i, et 1872, t. ii.*Distribution.* Africa south of the Sahara.

- I. Head very strongly compressed from before backwards. Anterior angles of the pronotum distinct or furnished with a tooth or toothed lobule. Four posterior legs and their sterna hairy. *Tarachodes*, Burmeister.

60. *Tarachodes perloides*, Burmeister.*Tarachodes perloides*, Burmeister, Handb. d. Entom., 1838, ii Bd., 2 Abth., p. 529.*Habitat.* Cape of Good Hope.

61. *Tarachodes pantherina*, Gerstaecker.

Tarachodes pantherina, Gerstaecker, Arch. f. Naturgesch. 1869, xxxv Jahr., i Bd., p. 208, ♂; et in von der Decken's Reis. in Ost-Afrika, 1873, iii Bd., 2^{te} Abth., p. 11, Taf. i, Fig. 5, ♂.

Habitat. Endara, East Africa.

62. *Tarachodes modesta*, Gerstaecker.

Tarachodes modesta, Gerstaecker, Arch. f. Naturgesch. 1869, xxxv Jahr., i Bd., p. 209, ♂; et in von der Decken's Reis. in Ost-Afrika, 1873, iii Bd., 2^{te} Abth., p. 11, ♂.

Habitat. Wanga, East Africa.

63. *Tarachodes insidiator*, Wood-Mason.

Tarachodes insidiator, Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 22, ♂.

♂. Body and appendages brown of the colour of a dead and decayed leaf. Antennæ rather coarsely setaceous. Pronotum with a polished conical spine on each side, at the junction of the anterior with the lateral margin, which is obsoletely denticulated as far back as the level of the supracoxal groove.

Organs of flight extending by about $\frac{1}{4}$ th of their length beyond the extremity of the abdomen, not quite perfectly hyaline, being just perceptibly milky, with veins and veinlets horn-coloured, short-streaked or annulated with darker in the anterior area of both pairs, though much less distinctly so in the wings than in the tegmina, the latter semiopaque horny anteriorly, as also are the former in a less degree; the stigma of the latter long and linear, pale whity-brown, almost colourless.

Legs obsoletely and rarely punctated and mottled with darker, and only moderately pubescent. The anterior ones marked with darker-brown (? red in the living insect) on the inner surface, the smooth-crested coxa being tipped at both ends, the trochanter streaked, and the femur ornamented along the middle with a streak, commencing at the base and tapering to a point before the extremity of the joint; fore tibia furnished with 15 and 13 spines on the inner and outer edges respectively.

Abdomen slightly fusiform, with at least the 2nd to 7th of its ventral arcs bimaculated with dark brown. Cerci rather broad.

Total length 47 millims; height or length of head 6.5, breadth 8; length of pronotum 11.5, greatest breadth (between the lateral bulgings) 6; length of meso = + metanotum = 10; of abdomen 23.5, greatest breadth of abdomen 6.75; length of tegmina 40, breadth (just before the middle) 11.5, of the marginal field 2; length of wings 35; length of fore coxa 7, femur

10; of intermediate femur 7; tibia 6·75; of posterior femur 8·75, tibia 8·75; of cerci 7.

Habitat. Nyassa, East Africa.

No. ⁷⁹⁹/₁. An adult male, the type of the species, dry, from the above locality. Purchased.

64. *Tarachodes dissimulator*, Wood-Mason.

Tarachodes dissimulator, Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 23, ♂.

♂. Pale greyish testaceous or earth-coloured, with the head, the upper (outer in the anterior ones) surface of the legs, and the pronotum symmetrically speckled and mottled with darker.

Head with the line of the vertex very slightly bisinuous. Antennæ extremely finely setaceous. Pronotum with two con-

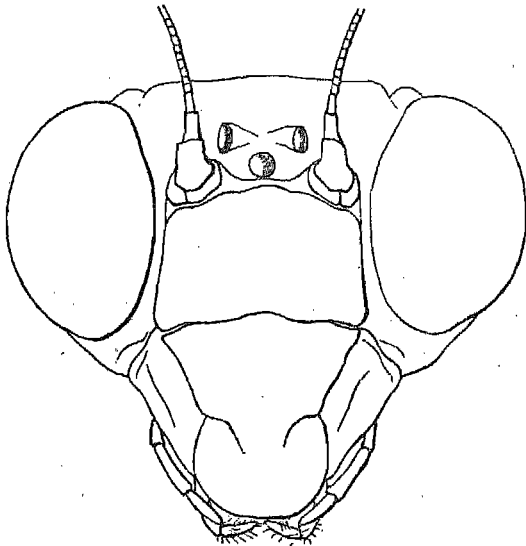


Fig. 20, head of ♂, from in front, × 10.

ical tubercles on each side at the junction of the obsoletely denticulate lateral with the anterior margin, which latter has a minute rounded median emargination.

Organs of flight in repose extending but little beyond the extremity of the abdomen, not quite hyaline, with veins and veinlets pale testaceous marked, especially in their anterior areæ, with dark brown short coalescent streaks, both more clouded anteriorly, the tegmina with an oval discoidal pale patch before

the middle devoid of dark marks, followed by another irregular and less distinct; the stigma shorter and brownish. Legs and leg-bases long-pubescent; the anterior pair internally yellowish and conspicuously marked with shining black, the coxa (which has its upper crest minutely 4-denticulate) throughout except at its two ends, and the femur from the base

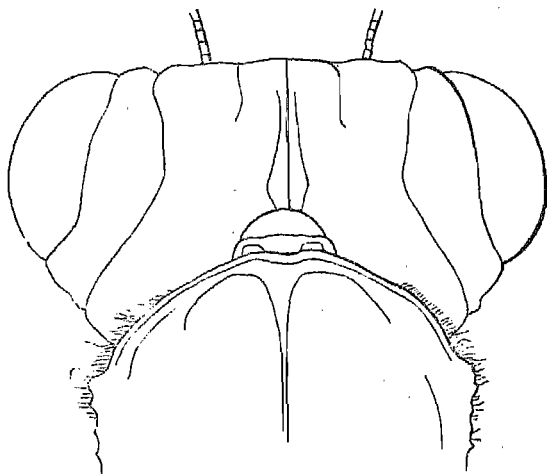


Fig. 21, head with front end of pronotum of ♂, from above, $\times 10$.

to the end of the second third, processes being given off from the lower margin of the black patch to all but the apical one of the black spines of the inner and inferior crest and from its distal end along each side of the femoral brush; fore tibiae armed externally with 14 teeth concolorous with the outer surface and internally with the same number of jet-black spines.

Prosternum marked behind the middle with a large and conspicuous deep, but dead, black cordiform blotch, which is succeeded by a pair of similarly coloured puncta placed near the posterior margin of the somite, and by a small roundish, also dead black, spot on the middle of the metathoracic sternum.

Abdomen more broadly fusiform; its cerci, though narrow, have the four or five terminal joints distinctly foliaceous.

Total length 41 millims.; height of head 6, breadth 7.25; length of pronotum 10.5, greatest breadth 5.25; length of meso- + metanotum 9; of abdomen 20, greatest breadth 7; length of tegmina 31, breadth 8.5, of the marginal field 1.5; length of wings 26; of fore coxa 6.5, femur 9.5; of intermediate femur 6.5, tibia 6; of posterior femur 7.5, tibia 7.5; of cerci 5.5.

Habitat. Cameroon Mountains, West Africa.

No. $\frac{4562}{4}$. An adult male, the type of the species, dry, from the above locality. Purchased.

65. *Tarachodes oxycephala*, Gerstaecker.

Tarachodes oxycephala, Gerstaecker, Beitr. Kennt. Orthopteren-Fauna Guinea's, 1883, p. 39, ♂.

Habitat. Ogowé.

66. *Tarachodes irrorata*, Gerstaecker.

Tarachodes irrorata, Gerstaecker, Beitr. Kennt. Orthopteren-Fauna Guinea's, 1883, p. 41, ♂.

Habitat. Akkra, Gold Coast.

67. *Tarachodes maura*, (Stål).

Chiropacha maura, Stål, Öfv. Vet. Ak. Förh. 1856, p. 168; 1872, p. 395, ♀; and 1876, p. 68.—Saussure, Mél. Orthopt., 1872, t. ii, p. 9.

Chiropacha (Chiropus) sancta, Saussure, Mél. Orthopt. 1870, t. i, p. 393, ♂, ♀.

There is, I think, no doubt that, as suggested by Saussure himself, *Ch. sancta* is a synonym of *Ch. maura*.

Habitat. Caffraria, Ovambo, Damara (Stål); Natal (Saussure).

68. *Tarachodes dives*, (Saussure).

Chiropacha (Chiropus) dives, Saussure, Mél. Orthopt. 1870, t. i, p. 164, ♂ ♀, pl. 4, figs. 1, 1a, ♀.—Id., op. cit. 1872, t. ii, p. 10, ♂ et ♂ var.

Habitat. ♂, Senegal and Sennar; ♀, Benguela; ♂ var. Sennar.

II. Head much less strongly compressed from before backwards. Anterior angles of the pronotum obtusely rounded off, unarmed. Four posterior legs glabrous. *Chiropacha*, Charpentier.

69. *Chiropacha afzelii*, Stål.

Chiropacha afzelii, Stål, Öfv. Vetensk. Ak. 1872, p. 396, ♀; op. cit. 1876, no. 3, p. 68.

Habitat. Sierra Leona.

70. *Chiropacha obtusiceps*, Stål.

Chiropacha obtusiceps, Stål, Öfv. Vetensk. Ak. Förh. 1872, p. 396, ♂; op. cit. 1876, no. 3, p. 68.

Habitat. Bahr el Abiad, Nubia.

It is possible, if not probable, that the two preceding may be opposite sexes of the same species, nothing in the description being opposed to this supposition, except the difference of locality. Certainly neither can have anything to do with *T. dives*, a species which has the anterior angles of the pronotum distinctly marked, for they both have the junction of the anterior margin with the lateral margins obtusely rounded off.

71. *Chiropacha gilva*, Charpentier.

Chiropacha gilva, Charpentier, Orthopt. Desc. et Depict. 1841, tab. 15, ♂, ♀.—Stål, Öfv. Vet.-Akad. Förh. 1872, pp. 395-96.—Saussure, Mél. Orthopt., 1870, t. i, p. 166.

Habitat. Egypt.

Genus 14. *GALEPSUS*, Stål.

Galepsus, Stål, Öfv. Vet.-Ak. Förh. 1876, p. 68.—Syst. Mant. 1877, p. 13.

Chiropacha, Saussure, Mél. Orthopt. (*ex parte*).

Distribution. West and South Africa.

72. *Galepsus meridionalis*, (Saussure).

Chiropacha meridionalis, Saussure, Mél. Orthopt. 1872, t. ii, p. 10, pl. 9, fig. 19, ♀.

Galepsus meridionalis, Stål, Syst. Mant. 1877, p. 17.

Habitat. Port Natal, Damara.

73. *Galepsus tenuis*, Stål.

Galepsus tenuis, Stål, Syst. Mant. 1877, p. 17, ♀.

Habitat. Western Africa.

Genus 15. *PYRGOMANTIS*, Gerstaecker.

Pyrgomantis, Gerstaecker, Arch. f. Naturgesch. 1869, xxxv Jahr., 1 Bd., p. 210, von der Decken's Reis. in Ost-Afrika.—Saussure, Mél. Orthopt. 1870, t. i, pp. 325 & 395.—Stål, Syst. Mant., 1877, p. 13.—Wood-Mason, J. A. S. B. 1882, vol. li, pt. 2, p. 24.

Distribution. South and East Africa.

74. *Pyrgomantis singularis*, Gerstaecker.

Pyrgomantis singularis, Gerstaecker, Arch. f. Naturgesch. 1869, xxxv Jahr., 1 Bd., p. 211, ♀ larva; von der Decken's Reis. in Ost-Afrika, 1873, iii Bd., ii Abth., p. 18, Taf. 1, Figs. 8 & 8b.—Saussure, Mél. Orthopt. 1870, t. i, p. 325, ♂.

Habitat. Between Mombas and Wanga, East Africa (*Gerstaecker*); and Port Natal, South Africa (*Saussure*).

75. *Pyrgomantis nasuta*, Saussure.

Pyrgomantis nasuta, Saussure, Mél. Orthopt. 1870, t. i, p. 396, ♂, pl. 7, fig. 57.—Stål, Öfv. Vet.-Ak. Förh. 1876, p. 69.

♀. The female, my specimen of which has been mislaid, is stouter than the male, with the organs of flight reduced to about

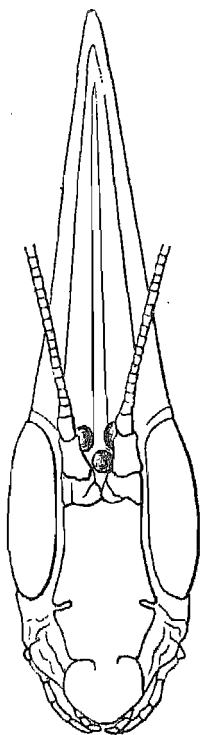


Fig. 22, ♂.

Front view of head, × 10.

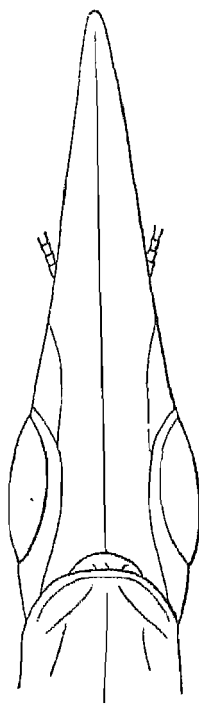


Fig. 23, ♂.

Back view of head, × 10.

the same extent as in *L. lenticularis*.

Habitat. South Africa (*Saussure*); Damara (*Stål*).

No. $\frac{108\frac{1}{2}}{1}$. An adult male, dry, from South Africa (*J. P. Mansel Weale*). Purchased.

No. An adult female, in spirits, from South Africa (*J. P. Mansel Weale*). To be presented by *J. Wood-Mason*.

This specimen has been mislaid.

Genus 16. **DIDYMOCORYPHA**, Wood-Mason.

Didymocorypha, Wood-Mason, Ann. et Mag. Nat. Hist. 1877, March, p. 222.—J. A. S. B. 1882, li, 2, p. 24.

Pyrgocotis, Stål, Syst. Mant. 1877, p. 18.

Distribution. India generally, from Kulu in the N.-W. Himalayas to Ceylon.

76. *Didymocorypha ensifera*, Wood-Mason.

(P) *Mantis lanceolata*, Fabr., Suppl. Ent. Syst. 1798, p. 191, ♂.

Didymocorypha ensifera, Wood-Mason, op. et loc. supra cit., ♀ nymph.

Pyrgocotis gracilipes, Stål, op. supra cit., p. 17, ♂.

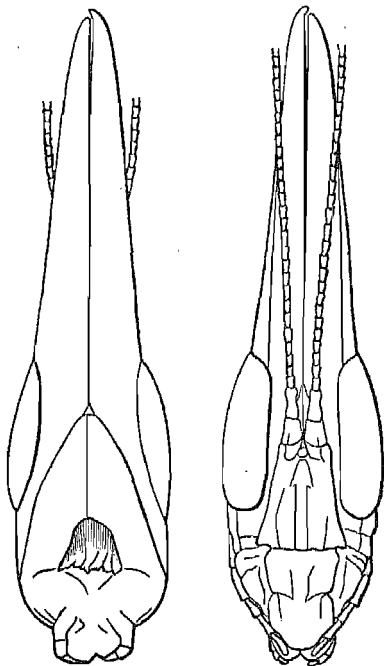


Fig. 24, ♀ nymph.
Back view of head, × 10.

Fig. 25, ♀ nymph.
Front view of head, × 10.

Habitat. Ceylon; Tinpahar, on the eastern flank of the Rajmahal Hills; Khurda, Orissa; and Kulu, Kangra, in the N.-W. Himalayas.

No. $\frac{9920}{6}$. An adult male, dry, with wings extended, from Khurda, Orissa. Collected and presented by W. C. Taylor, Esq.

No. $\frac{4513}{4}$. An adult male, dry, with wings extended, from Kulu, 2,000 feet, in the North-Western Himalayas (*A. G. Young*). Purchased.

No. $\frac{1090}{1}$. An adult male, dry, with wings closed, from India (*C. D. E. Fortnum*). Professor Westwood (*E.*).

No. 574. A full-grown larva of a female, the specimen upon which the genus and species were founded, in spirits, from the flat country around Tinpahar, a station on the East Indian Railway, about 6 miles south-west of the town of Rajmahal. Collected and presented by J. Wood-Mason.

No. $\frac{4379}{4}$. A full-grown larva, believed from its size to be that of a female, in spirits, from Kulu, Kangra, North-Western Himalayas (*A. G. Young*). Purchased.

The figure has been taken from this specimen.

No. $\frac{9848}{6}$. An adult male, in spirits, from Hambantolá, Southern Province, Ceylon.

No. $\frac{9889}{6}$. A nymphal male, in spirits, from the same locality.

Both collected and presented by A. P. Green, Esq.

Genus 17. **LYGDAMIA**, Stål.

Lygdamia, Stål, Syst. Mant. 1877, p. 14.

Distribution. Africa, south of the Sahara.

77. *Lygdamia lenticularis*, (Saussure).

Chirotopacha lenticularis, Saussure, Mél. Orthopt. 1872, t. ii, p. 11, pl. ix, fig. 18, ♂.—Stål, Öfv. Vet. Ak. Förh. 1876, p. 69.

Lygdamia lenticularis, Stål, Syst. Mant. 1877, p. 17, ♀.

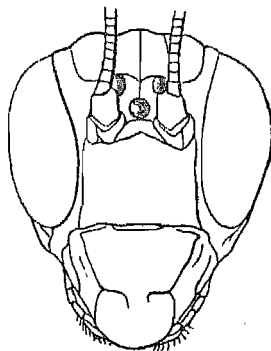


Fig. 26, head of ♂, from in front, $\times 10$.

Habitat. Port Natal (*Saussure*), Transvaal (*Stål*), South Africa.

No. $\frac{1086}{1}$ -a. An adult male, dry, with wings extended, from South Africa (*J. P. Mansel Weale*). Purchased.

The figured specimen.

No. $\frac{1086}{1}$ -b. An adult male, dry, with wings closed, from South Africa (*J. P. Mansel Weale*). Purchased.

No. $\frac{1086}{1}$ -c. An adult female, dry, from South Africa (*J. P. Mansel Weale*). Purchased.

78. *Lygdamia capitata*, (*Saussure*).

Chiropacha capitata, *Saussure*, Bull. Soc. Entom. Suisse iii, 1869, p. 61, ♂.—*Mél. Orthopt.* 1870, i, p. 166, pl. 4, fig. 2, ♂; 1872, t. ii, p. 10.

Lygdamia capitata, *Stål*, Syst. Mant. 1877, p. 17.

Approaches *P. collaris* in the form of the head and eyes, which latter bear at the apex a very minute and smooth

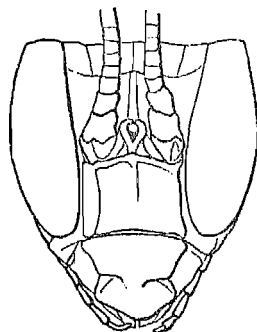


Fig. 27, head of ♂ larva, from in front, $\times 14$.

tubercle representing the corneal spine of allied forms.

Habitat. Zanzibar (*Stål*), Sennar (*Saussure*).

No. $\frac{795}{1}$. An adult male, dry, from Nyassa. Purchased.

No. $\frac{5419}{4}$. An adult male, dry, from Delagoa Bay, S.-E. Africa. Purchased.

No. $\frac{1087}{1}$. A larval ♂, possibly belonging to this species, dry, from South Africa (*J. P. Mansel Weale*). Purchased.

The subject of Fig. 27.

Genus 18. **OXYOPHTHALMUS**, Saussure.*Oxyophthalmus*, Saussure, Ann. Soc. Ent. Fr. 1861, p. 469.—Mél.

Orthopt. 1870, t. i, p. 394.—Stål, Syst. Mant. 1877, p. 14.

Distribution. South India and Ceylon.79. *Oxyophthalmus gracilis*, Saussure.*Oxyophthalmus gracilis*, Saussure, Ann. Soc. Ent. Fr. 1861, p. 470,

pl. xi, fig. 1, ♀.—Mél. Orthopt. 1870, t. i, p. 395.

Habitat. Ceylon.80. *Oxyophthalmus engæus*, n. sp.

♀, ♂. Closely allied to the preceding, from which it differs in the relative proportions of its parts, in having the tibial arnatura 7-7 and 10-10 (in all the specimens examined, except one, a male, in which it is 7-7 and 9-9), and the facial shield transverse and without carinæ.

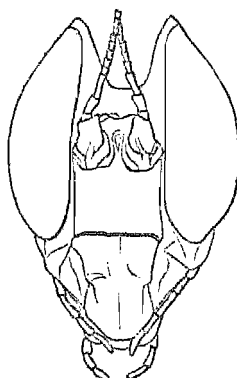


Fig. 28, head of ♂, from in front, × 14.

The colour is a more or less violascent earth-colour, speckled and spotted with dark violet-brown and black, much as in the insular form.

Total length, ♂ 22 and 24, ♀ 30 and 33; length of pronotum, ♂ 5·3, ♀ 7 and 7·2; length of tegmina, ♂ 10 and 10·5, ♀ 13 and 12.

Habitat. Nilgiri Mountains, South India.

No. $\frac{9370}{6}$. Three adult males, in spirit, from the Nilgiri Mountains, South India.

The broken specimen is the one from which the wood-cut has been prepared.

No. $\frac{9320}{6}$. An adult female, in spirit, from the southern slopes of the same mountains at 3,000-6,000 feet elevation.

No. $\frac{9328}{6}$. An adult female, in spirit, from the northern slopes, at 3,500 feet.

No. $\frac{9921}{I}$. Four nymphs, in spirit, from the Nilgiri Mountains.

All collected and presented by G. F. Hampson, Esq., B.A., Exeter College, Oxford.

Genus 19. **PAROXYOPHTHALMUS**, novum.

Oxyophthalma, Saussure (*ex parte*).

Distinguished by the vertex being truncated, or even a little hollowed out, between the summits of the eyes, which form the highest points of the head, by the eyes being angulated and produced at the angles to a minute tooth or tubercle representing the corneal spines of allied forms, by the form of the prothorax, and by the fuscous discal blotch of the wings.

Distribution. N.-E. and N.-W. Africa.

81. **Paroxyophthalmus collaris**, (Saussure).

Oxyophthalma (*Episcopus*) *collaris*, Saussure, Mém. Orthopt. 1872, t. ii, p. 14, pl. ix, fig. 17, ♂.

Habitat. Sennar on the Blue Nile, west of Abyssinia.

82. **Paroxyophthalmus** (?) *savatieri* (Rochebrune).

Oxyophthalma savatieri, Rochebrune, Bull. Soc. Phil. 1884, (7) vii, p. 176.

Habitat. Senegambia.

Genus 20. **EPISCOPUS**, Saussure.

Episcopus, Saussure, Mém. Orthopt. 1872, t. ii, p. 12.—Stål, Syst. Mant. 1877, p. 14.

Distribution. South Africa.

83. **Episcopus chalybeus**, (Burmeister).

Schizocephala chalybaea, Burmeister, Handb. d. Entom. 1838, ii Bd., 2^{te} Abth., p. 552.

Oxyophthalma (*Episcopus*) *chalybea*, Saussure, Mém. Orthopt. 1872, t. ii, p. 12, pl. viii, figs. 2, 2a, ♂.

Episcopus chalybeus, Stål, Syst. Mant. 1877, p. 18.—Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 24, ♀.

♀. Organs of flight abbreviated. Tegmina about $1\frac{1}{2}$ times as long as the pronotum, scarcely extending to the middle of the fourth abdominal somite, thin-coriaceous, opaque, light

yellowish green, the anal gusset alone membranous and semi-hyaline. Wings reaching to a little beyond the end of the 3rd abdominal somite, reduced nearly to a quadrant of a circle, their anal emargination almost none, their anterior area semicori-

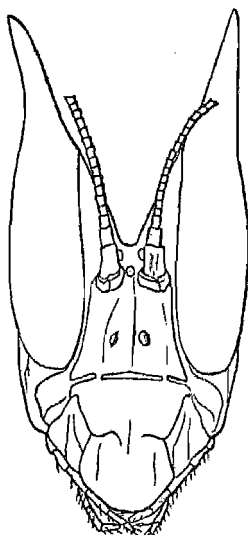


Fig. 29, head of ♀, from in front, $\times 10$.

aceous, yellow, their posterior area at the base and along the abdominal margin membranous and milky, like the anal gusset of the tegmina, ornamented in the middle by a large violet-brown metallic blotch (on which the veins are broadly margined with paler and yellower brown), at the basal end of which are 3 or 4 small opaque yellowish spots on transverse veinlets, and between which and the outer margin are alternate arcs of violet-brown and opaque yellow.

Total length 47 millimetres; length of pronotum 11; of tegmina 16; of wings 12.5.

Habitat. South Africa (*Saussure*, *Wood-Mason*); *Damara* (*Stål*).

Genus 21. **PAREPISCOPUS**, novum.

Closely allied to *Episcopus* and *Dysaules*. Head, as in *Episcopus*, but broader and not so narrowly or so deeply concave between the tops of the eyes. Eyes not quite so narrow when viewed from in front, not nearly so far produced upwards beyond the vertex, and ending in a much shorter conical spine, which is similarly devoid of facets at its apex. Facial shield somewhat

transverse, with its lateral and basal margins limbate and its disk longitudinally bicarinate. Suture between clypeus and labrum effaced. Prothorax and legs constructed as in *Dysaules* substantially. Abdomen wanting. Founded on a nymph.

84. *Parepiscopus hampsoni*, n. sp.

♂ *Nymph*. Pale luteous,—probably violascent earth-coloured in life,—with the eyes dirty red-violet.

Fore coxæ lodged when at rest in a double groove of the prosternum, which extends from the setting-on of the forelegs to the end of the fourth-fifth of the length of the prothorax, their upper crest armed with a few minute denticles and hairs, as in *Dysaules*; trochanter with a diffuse black or dark brown spot inside; femora long and slender, very faintly sinuous above, and

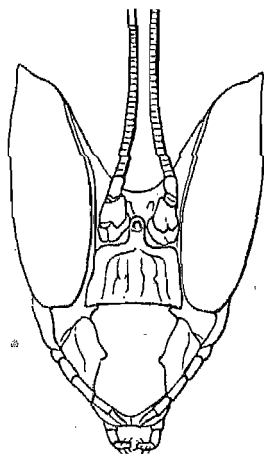


Fig. 80, head of ♂ nymph, from in front, $\times 14$.

moderately arched below, with the unguinal groove nearly in the middle, and with three black spots in the inside, one at the base, another linear at the bases of the two proximal discoidal spines, and a third on the distal edge of the unguinal groove, opposite the bases of the two proximal spines of the lower margin of the joint; tibiae about half the length of the femora, armed with 12 spines on the outsides, and with 12 and 14 on the insides. Intermediate legs short, their femora and tibiae little more than $\frac{2}{3}$ the length of those of the posterior pair, which, when laid back, probably reached little, if at all, beyond the extremity of the abdomen; posterior femora a trifle shorter than the anterior.

Tip of the abdomen wanting.

Length of pronotum 10, breadth 1·5; length of fore femur 6·2, intermediate femur 3·75, posterior femur 6 millims.

Habitat. Lower slopes of the Nilgiri Mts., South India.

No. $\frac{2360}{6}$. A nymph, in spirits, from the above locality. Collected and presented by G. F. Hampson, Esq., B.A.

Genus 22. **DYSAULES**, Stål.

Dysaules, Stål, Syst. Mant. 1877, p. 14.—Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 25.

The head between the tops of the eyes is either truncate or concave, the eyes are furnished at the apex with a minute and smooth granule representing the ocular spine of the allied genera, and the organs of flight are abbreviated in the female.

Distribution. India generally.

85. *Dysaules longicollis*, Stål.

Dysaules longicollis, Stål, Syst. Mant. 1877, p. 18, ♂ non ♀.

Dysaules longicollis. var. *brevipennis*, Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 25, ♀.

♂, ♀. Head between the tops of the eyes truncate or concave-truncate.

♀. Organs of flight more abbreviated, both pairs being shorter than the pronotum, and the wings having the shape

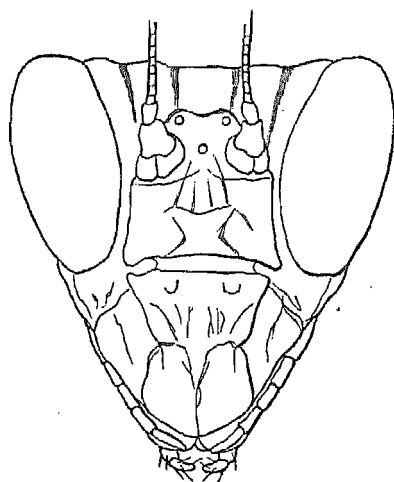


Fig. 31, head of ♀, from in front, × 10.

of a quadrant of a circle, with the anal margination less evident than in the corresponding sex of the following species.

Length of pronotum 18·75, of tegmina 15·5, and of wings 12·5 millimetres.

Habitat. Bengal (*Stål*) and South India (*Wood-Mason*).

No. $\frac{518}{1}a$. The typical specimen of the female, in spirits, from Bangalore (*Reedy*). Purchased.

The head between the tops of the eyes is more concave than in the succeeding specimen.

No. $\frac{518}{1}b$. Another adult female, in spirits, from the same locality, the specimen from which the accompanying figure has been drawn. Presented by the late Geoffrey Nevill, Esq.

86. *Dysaules himalayanus*, n. sp.

Dysaules longicollis, Wood-Mason, J. A. S. B. 1882, vol. li, pt. ii, p. 25, ♂ ♀, non Stål.

♂, ♀. Eyes more produced, and the head between the tops of the eyes strongly concave, especially in the male. Facial shield with its basal angles rounded and its basal and lateral margins limbate. Anterior femora marked on the inside, just in front of the unguis groove, with a small round black spot.

♂. Organs of flight pale, slightly clouded horn-coloured. The wings ornamented towards the base of the posterior area

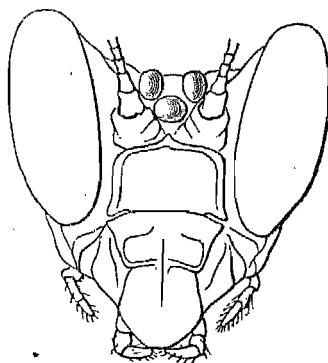


Fig. 32, head of ♂, from in front, × 10.

with a large oval dark violet-fusca patch, which is succeeded by 9 or 10 interrupted concentric bands of the same colour, extending into the anterior area, where they form 1 or 2 longitudinal rows of spots, becoming closer together, narrower, and fainter towards the outer margins of the organs, and the first 2 or 3 alternating with broken bands of pale yellow.

Total length 51 millims; length of pronotum 15·25; of tegmina (tips broken) c. 31·5, of wings (tips broken) c. 31.

♀. Wings and tegmina abbreviated, semiopaque: the latter scarcely longer than the pronotum, yellowish horny, with the meshes all faintly smoky or sordid, and with the apex and a discoidal punctular spot fuscous; the former with the anal emargination very slight and shallow and obtuse-angled, with the anterior area reddish-horny tipped with fuscous, and the posterior bright

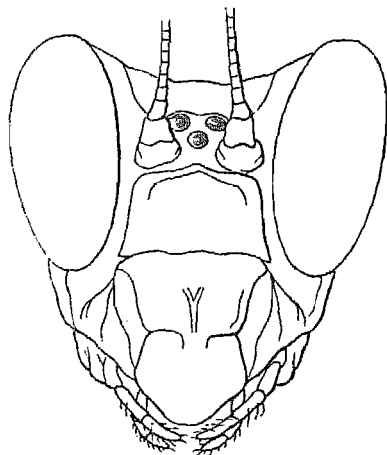


Fig. 83, head of ♀, from in front, $\times 10$.

yellow and bearing near the base a large oval dark violet-fuscous patch, which is succeeded by a number of concentric lines of the same colour extending to, and becoming successively closer and closer together towards, the outer margin, where they unite to form with the fuscous apex a fuscous outer border decreasing from the apex to the posterior angle of the organs.

Total length 56 millims.; length of pronotum 18; of tegmina 19, width of tegmina 6; length of wings 15.

Habitat. The North-Western Himalayas.

No. $\frac{6527}{1}$. An adult male, dry, from Kulu, Kangra, North-Western Himalayas (*A. G. Young*), the type specimen, from which the accompanying figure has been drawn. Purchased.

No. $\frac{6526}{1}$. An adult female, dry, from Kulu, Kangra, North-Western Himalayas (*A. G. Young*), the type of the female. Purchased.

No. $\frac{4539}{4}$. An adult female, in spirit, from Kulu, Kangra, in the North-Western Himalayas (*A. G. Young*), from which the accompanying figure has been drawn. Purchased.

No. $\frac{9874}{2}$. An adult female, dry, from Mundi, 2,300 feet, North-Western Himalayas (*A. G. Young*). Purchased.

Genus 23. SCHIZOCEPHALA, Serville.

Serville, Ann. d. Sc. Nat. 1831, t. xxi, pp. 46 et 55; Hist. Nat. des Orthopt. 1839, p. 166.—*Burmeister*, Handb. d. Entom. 1838, t. ii, Bd., 2^{te} Abth., 1838, p. 552.—*Saussure*, Mél. Orthopt. 1870, t. i, p. 283.

Distribution. Throughout India, from Cape Comorin to the Himalayas, extending into Sind and Cutch on the north-west, and into Ceylon in the south.

87. *Schizocephala bicornis*, (*Linnaeus*).

Gryllus bicornis, Linn., Mus. Lud. Ulr. 1764, p. 116, no. 7, ♂.
Mantis bicornis, Id., Syst. Nat. 1767, ed. xii, t. i, pars ii, p. 691, no. 11.

Mantis oculata, Fabr., Spec. Insect. 1781, t. i, p. 348, no. 16; Ent. Syst. 1793, t. ii, p. 19, ♂.—*Stoll*, Spectres et Mantes, 1788, pp. 79, et 32, pl. x, fig. 38 ♂, et p. 43, pl. xiii, fig. 53, ♂.

Mantis stricta, Olivier, Encyclo. Méth., Hist. Nat. d. Ins., 1792, t. vii, p. 641, no. 12 spec. min. cognit., founded apparently on *Stoll's* fig. 88.

Mantis fausta, Thunberg, Diss. Ent. Nov. Ins. Sp. Sist. 1784, pars iii, p. 63 (*test. auct.*)

Schizocephala stricta, Serv., Ann. d. Sc. Nat. 1831, t. xxi, p. 56, ♂.

Schizocephala oculata, Burm., Handb. d. Entom. 1838, 2^{te} Band, 2^{te} Abth., p. 552, ♂.

Schizocephala bicornis, Serv., Hist. Nat. d. Orthopt. 1839, p. 167, ♂.—*Saussure*, Mél. Orthopt. 1870, t. i, p. 285, ♀.—*Wood-Mason*, P. A. S. B. 1876, p. 123, et A. & M. N. H. 1876, ser. 4, vol. xviii, p. 439.

♀. Grass-green. The costal margin of the tegmina yellowish flesh-coloured. Basal two-thirds of antennæ pale red-violet above, faintly tinged with the same colour below, the remaining third pale lemon-yellow. Eyes dark fuscous. Ventral arcs of the abdomen greenish white, bordered at the sides with green; last dorsal segment paler, its basal fourth and the two preceding segments with a median reddish buff stripe divided into two by a paler streak and bounded laterally by irregular yellow lines; the margins of these segments also yellow. Cerci yellowish flesh-coloured. Prosternum with a median line of irregular darkish spots. Front of head yellowish green.

The above is a description of the colours of a living specimen (No. $\frac{1089}{1}$) captured by the writer in the Royal Botanic Gardens at Sibpur, near Calcutta, where the species abounds.

All the immature insects which I have ever captured were whity-brown or stone-coloured, frequently very faintly tinged

in parts with pink or ashy white, and they matched well with the parched grass of the open spots where they were found.

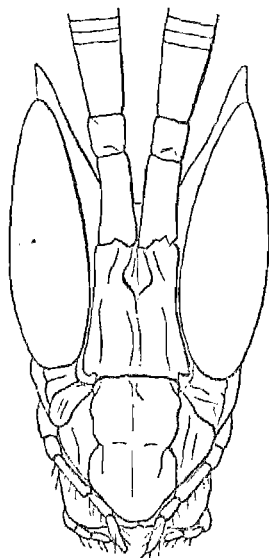


Fig. 34, head of ♀, from in front, × 10.

Amongst the coloured sketches of Orthoptera made by native artists under the supervision of the late Sir Walter Elliot are some which show that South Indian males may be grass-green with a silvery white stripe in the marginal field of the tegmina and a row of black spots along the middle of the prosternum, and that females may be neutral-tinted or earth-coloured with a conspicuous dark fuscous median dorsal stripe, which is undivided on the thorax, but split into two on the abdomen with the integument on either side of it finely and obscurely striated.

This species is remarkable for its enormously elongated and filiform legs and body, and lives on tall grasses. In the adult condition it is fully thirty times as long as broad, but when it quits the egg the length of the body in proportion to its greatest breadth is only as about fifteen to one; from which fact it may with confidence be inferred that the species is descended from some shorter and stouter form, and in course of time has gradually become perfectly assimilated in form, as well as in colour, to grasses.

Habitat. Generally distributed throughout India.

No. of Specimen.	$\frac{9302.}{6}$.	$\frac{4302.}{4}$.	589.	$\frac{4300.}{4}$.	$\frac{9857.}{8}$.
Sex.	♂.	♀.	♀	♀.	♂.
	mm.	mm.	mm.	mm.	mm.
Length, from points of eyes to end of abdomen.	97.0	120.0	127.0	116.0	...
Length of pronotum . . .	35.5	50.0	54.0	47.3	26.0
Length of its anterior lobe . .	7.0	9.0	10.0	8.3	5.0
Length of its posterior lobe . .	28.5	41.0	44.0	39.0	21.0
Length of conjoined meso- and metanotum and seg. med.	13.5	11.5	12.0	11.0	11.0
Length of abdomen	43.0	53.5	57.0	52.0	...
Length of cerci	13.0	18.5	17.25	15.0	...
Length of antennæ	33.0	35.0	38.0	33.0	32.0
Length of tegmina	35.75	10.0	10.5	9.0	27.0
Breadth of tegmina	5.75	4.5
Length of wings	36.0	4.75	3.5	3.5	28.5
Breadth of wings	14.5	12.0
Length of fore coxa	16.5	19.0	22.0	18.5	11.0
Length of fore femur	21.0	26.0	29.0	24.5	15.0
Length of intermediate femur	30.0	38.0	43.0	37.0	22.75
Length of intermediate tibia	30.0	42.0	48.0	42.0	23.75
Length of intermediate 1st tarsal joint	5.0	6.0	7.25	6.0	4.5
Length of posterior femur	34.0	40.0	47.0	40.0	25.5
Length of posterior tibia	35.0	52.0	60.0	50.0	30.0
Length of posterior 1st tarsal joint	7.0	8.5	9.75	8.0	6.75

No. $\frac{9302}{6}$. An adult male, dry, from Calcutta, presented by Dr. J. Anderson, F. R. S.

The longitudinal veins of the tegmina and of the anterior area of the wings are hair-brown.

No. $\frac{1083}{1}$. An adult female, with the egg-capsule which she laid in captivity, dry, from the Royal Botanic Gardens, Sibpur, near Calcutta. Collected and presented by J. Wood-Mason.

No. $\frac{570}{1}$. Seven just-hatched larvæ from the above egg-capsule. Presented by J. Wood-Mason.

Egg-capsule formed during the night of July 16th to 17th. Eggs hatched on August 16th (*see* Trans. Ent. Soc. Lond. 1878, p. 270).

For remarks on the just hatched young, see Proc. Ent. Soc. Lond. 1877, p. xxx.

No. $\frac{9393}{6}$. An adult male without abdomen, dry, from Calcutta. Collected and presented by L. de Nicéville, Esq.

The veins of the wings and tegmina are almost colourless.

No. $\frac{9394}{6}$. A nymphal male, dry, from Calcutta. Collected and presented by L. de Nicéville, Esq.

Nos. $\frac{9817}{9}$ to $\frac{9819}{9}$. Three adult females, dry, from Calcutta. L. de Nicéville, Esq. (E).

No. $\frac{1039}{1}$. An adult female, dry, from Berhampore, Murshedabad. Presented by C. W. Marshall, Esq.

No. $\frac{512}{1}$. Many nymphs of both sexes, in spirits, from the flat country around Tinpahar, a station on the East Indian Railway, about 6 miles south-west of the town of Rajmahal. Collected and presented by J. Wood-Mason.

No. $\frac{308}{1}$. Two nymphs, one male, the other sex indeterminate in consequence of the genital segments being absent, in spirits, from the Karakpur Hills. Collected and presented by E. Lockwood, Esq.

No. $\frac{59}{1}$. Three nymphs, one male and two sex indeterminate for the above reason, in spirits, from Chanda, Central Provinces of India. Collected and presented by T. H. H. Hughes, Esq.

One striped.

No. $\frac{4542}{4}$. An adult female, dry, from Kulu, Kangra, in the N.-W. Himalayas (A. G. Young). Purchased.

No. $\frac{1091}{1}$. A nymph, sex indeterminate, dry, from Cutch. Collected and presented by the late Dr. F. Stoliczka.

No. $\frac{415}{1}$. A nymph, sex indeterminate, in spirits, from Kaladgi, Bombay Presidency. Collected and presented by R. B. Foote, Esq.

No. $\frac{743}{1}$. A striped nymph, sex indeterminate, in spirits, from Western Sind. Collected and presented by the late F. Fedden, Esq.

No. $\frac{9397}{6}$. A nymph, sex indeterminate, in spirits, from Anantigiri, Vizagapatam. Collected by Moti Ram, Mus. Coll.

No. $\frac{9397}{6}$. Two adult males, in spirits, from the lower slopes of the Nilgiri Hills. Collected and presented by G. F. Hampson, Esq., B.A.

Both striped.

No. $\frac{6446}{4}$. Ten adult females, in spirits, from Bangalore, Mysore. Purchased.

Four are striped dorsally and six are plain.

The figure of the head of the species is from one of the striped specimens.

No. $\frac{4301}{4}$. Three adult males, in spirits, from Bangalore, Mysore. Purchased.

All are more or less striped.

No. $\frac{774}{1}$. Two adult females, in spirits, from Mysore. Purchased.

No. 569. An adult female, in spirits, from Madras. Purchased.

No. $\frac{4300}{4}$. An adult female, in spirits, from Bangalore. Collected and presented by G. Nevill, Esq.

No. $\frac{4376}{1}$. One adult male and four adult females (one striped), in spirits, from Mysore. Purchased.

No. $\frac{4302}{4}$. An adult female, in spirits, from Ceylon. Collected and presented by Hugh Nevill, Esq.

No. $\frac{4299}{4}$. A nymph, sex indeterminable, in spirits, from Pegu. Collected and presented by Sulpiz Kurz, Esq.

This locality requires confirmation; no specimen having, either before or since, been received by me from any place to the east of the Bay of Bengal.

A
CATALOGUE
OF
THE MANTODEA,

WITH
DESCRIPTIONS OF NEW GENERA AND SPECIES, AND AN ENUMERA-
TION OF THE SPECIMENS, IN THE COLLECTION
OF THE INDIAN MUSEUM, CALCUTTA.

BY
J. WOOD-MASON,

SUPERINTENDENT OF THE INDIAN MUSEUM, AND PROFESSOR OF COMPARATIVE ANATOMY IN THE MEDICAL
COLLEGE OF BENGAL, CALCUTTA; FELLOW OF THE UNIVERSITY OF CALCUTTA; PRESIDENT OF
THE MICROSCOPICAL SOCIETY OF CALCUTTA; VICE-PRESIDENT OF THE ASIATIC
SOCIETY OF BENGAL; FELLOW OF THE ZOOLOGICAL SOCIETY OF
LONDON; MITGLIED D. K. K. ZOOLOGISCH-BOTANISCHEN
GESELLSCHAFT IN WIEN: &c.

No. 2, pp. 49-66, with Pls. I & II, and one Woodcut.



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Subfamily III. MANTIDÆ, Stål.

Syst. Mant. 1877, p. 6.

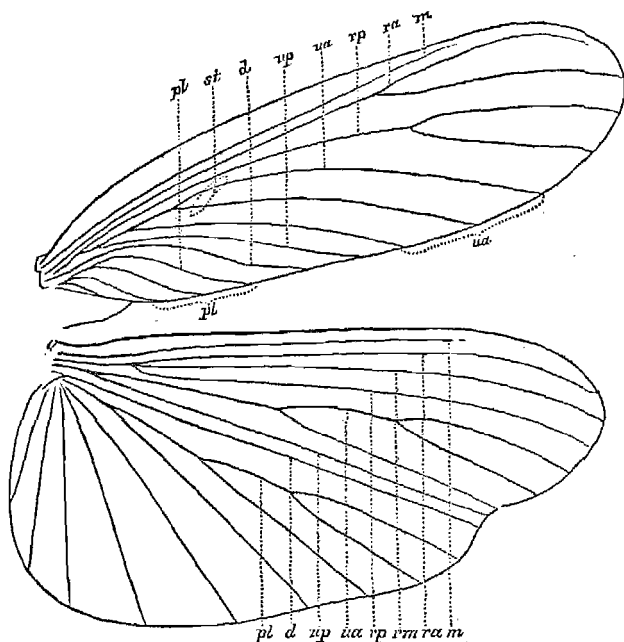


Fig. 35, *Iridopteryx*, sp., ♂. Organs of flight of the right side, $\times 5$: *m*, vena mediastina; *ra*, v. radialis anterior; *rm*, vena radialis media; *rp*, v. radialis posterior; *ua*, v. ulnaris anterior; *up*, v. ulnaris posterior; *d*, v. divdens; *pl*, v. plicata; *s*, stigma alarum. All the transverse veinlets have been omitted for the sake of clearness.

Genus 24. **SIBYLLA**, Stål.

Sibylla, Stål, Öfv. K. Vet.-Ak. Förh. 1856, p. 168; 1872, p. 384; et Syst. Mant. 1877, p. 20.—Saunders, Mém. Orthopt. 1871, t. i, p. 455; et 1872, t. ii, p. 80 (*ex parte*).

Distribution. The South-African sub-region of the Ethiopian Region.

88. *Sibylla pretiosa*, Stål.

Sibylla pretiosa, Stål, Ofv. K. Vet.-Ak. Förh. 1856, p. 168; et 1872, p. 385, ♀.—Saussure, Mém. Orthopt. 1871, t. i, p. 456, pl. vii, figs. 69, 69 a., ♀; et 1872, t. ii, p. 81, ♂ ♀.
Sibylla fuscospersa, Stål, op. cit. p. 385, ♂.

Habitat. Caffraria (Stål); Natal (Saussure).

No. 1236. An adult female, dry, from Caffraria (Wahlberg).
 Professor C. Stål (E.).

Genus 25. *ARRIA*, Stål.

Arria, Stål, Syst. Mant. 1877, p. 20.

Distribution. The Indo-Chinese sub-region of the Oriental Region.

89. *Arria cinctipes*, Stål.

Arria cinctipes, Stål, Syst. Mant. 1877, p. 46, ♂.

The accompanying illustrations have been compared with the typical specimen in the Stockholm Museum and found to agree completely therewith, by Professor Leche of the Zootomical Institute, Stockholm University.

Habitat. India orientalis (Stål); Manipur, N. E. India.

Nos. ⁸⁰⁷⁰ and ⁸⁰⁷¹. Two nymphal females, dry, from Mao, Manipur, 7,000 feet. Collected and presented by W. Doherty, Esq., Cincinnati, U. S. A.

Pl. III, Fig. 1, head and pronotum of the former specimen, from above, × 5; 1a, head from in front, × 5; 1b, left foreleg, from the inside, × 5.

Genus 26. *OXYPILUS*, Serville.

Oxypilus, Serville, Ann. des Sc. Nat. 1831, t. xxii, p. 50; et Hist. Nat. des Orthopt. 1838, p. 155, ♂.—Burmeister, Handb. d. Entomol. 1838, ii Band, 2te Abtheil., p. 526, ♂.—Saussure, Mém. Orthopt. 1870, t. i, p. 316, ♀.—Stål, Syst. Mant. 1877, p. 21, ♂.—Westwood, Rev. Mant. 1889, p. 22 (*ex parte*).

In the structure of the forelegs this genus agrees very closely with the two succeeding genera, the only important difference I have been able to discover being that the foliaceous upper margin of the fore femora is obliquely truncated and serrated at the apical end in the former and that it is entire in the latter.

Distribution. The Ethiopian Region.

90. *Oxypilus annulatus*, Serville.

Oxypilus annulatus, Serville, Ann. des Sc. Nat. 1831, t. xxii, p. 501; et Hist. Nat. des Orthopt. 1839, p. 156, ♂.

Habitat. Senegal (*Serville*).

No. $\frac{4573}{4}$. A nymphal female, dry, from Mancazane, South Africa (*J. P. Mansel Weale*). Purchased.

No. $\frac{4574}{4}$. A nymphal female, dry, obtained in the same locality by the same naturalist. Purchased.

No. $\frac{4576-4577}{4}$. Three nymphal males, dry, obtained in the same locality by the same naturalist. Presented by J. Wood-Mason. The last is the figured specimen.

No. $\frac{4578}{4}$. A nymphal female, dry, obtained in the same locality by the same naturalist. Presented by J. Wood-Mason.

The figured specimen.

The above are the specimens of the little 'Mantis' on the habits of which Mr. Mansel Weale has given the following note (Trans. Ent. Soc. London, 1878, p. 186): "Among the insects commonly found are several which wonderfully resemble the droppings of birds, and their colouration, as might have been anticipated, is extremely variable. The pupæ of *Pieris agathina* and *Pieris poppea* have this resemblance, while a small mantis, an undescribed species of *Thomisus*, an epeirid, a species of *Zilla* and a small moth (*Arontias formosa*) extremely variable in its colour, are always found in conspicuous positions, and by the attitudes they assume are difficult to distinguish from the real droppings. The little Mantis in particular, though extremely active, on being disturbed, when frightened, or on the watch for prey, doubles all its limbs together and bends back its abdomen in such a manner as to appear quite inanimate." When these specimens first came into my hands they were covered with a white floury secretion which must have greatly heightened the resemblance of the living insects to birds' droppings.

Pl. II, Fig. 1, head and pronotum of a nymphal male, from above, $\times 7$; 1a, head, from in front, $\times 7$; 1b, head and pronotum, from the left side, $\times 5$; 1c, left foreleg of a nymphal female, from the inside, $\times 5$.

91. *Oxypilus nasuta*, (Fabricius).

Mantis nasuta, Fabr., Mant. Insect. 1787, t. i, p. 229, no. 32, ♂.

Oxypilus nasutus, Stål, Syst. Mant. 1877, p. 46, ♂.

Habitat. Cape of Good Hope (*Fabricius*, *Stål*).

92. *Oxypilus capensis*, Saussure.

Oxypilus capensis, Saussure, Mél. Orthopt. 1870, t. i, p. 317, pl. vi, figs. 52, 52a, ♀ (subimago?).—Westwood, Rev. Mant. 1889, p. 44, pl. xii, fig. 1, ♀.

Oxypilus strigipennis, Westwood, op. supra cit. pp. 22 et 44, pl. ix, fig. 7, ♂.

Habitat.—Cape of Good Hope (*Saussure*); Natal (*Westwood*).

93. *Oxypilus brunnerianus*, Saussure.

Oxypilus brunnerianus, Saussure, Mél. Orthopt. 1870, t. i, p. 318, ♀.

Habitat. Nubia (*Saussure*).

*Species of Doubtful Position.*94. *Oxypilus?* *polyacanthus*, (Gerstaecker).

Sibylla? *polyacantha*, Gerstaecker, Mitth. Naturwissensch. Ver. Neuvoipomm. u. Rüg. 1889, p. 91.

Habitat. Stanley Pool, Congo (*Gerstaecker*).

Genus 27. **CERATOMANTIS**, Wood-Mason.

Ceratomantis, Wood-Mason, P. A. S. B. 1876, p. 175; Ann. & Mag. Nat. Hist. 1876, 4 ser., vol. xviii, p. 507.—Westwood, Rev. Mant. 1889, p. 22.

♂ ♀. The whole vertex is prolonged into a tall, forwardly-inclined, bifid horn, which is tricarinate in front and bidentate on each side; the transversely pentagonal facial shield and the clypeus are strongly roof-shaped and the ridge of the former is produced at the base into a slender conical spine; each lateral lobe of the vertex bears a huge regularly conical tubercle; the two posterior stemmatal eminences are prolonged upwards into a slender conical spine.

Pronotum with a pair of huge conical spines on each of its two lobes, the anterior of which is rather the longer; its dilatation truncate-rounded with a large spine at either end of the truncated extremity; its posterolateral angles not produced.

♀. Organs of flight subabbreviated, pellucid, except in the marginal field: tegmina sub-parallel-sided, with the longitudinal veins rather distant and curved and the cellules between them few, large and quadrate; the anterior radial vein simple and unbranched, the posterior forked; the anterior ulnar forked; the v. divdens with the v. plicata and its two branches broken up into a reticulum near the margin of the posterior

area, which is convex: wings with the anterior area somewhat produced beyond the posterior and a distinct anal emargination; the anterior ulnar 2-branched, and the v. plicata forked.

♂ ♀. Fore femora with the margin of its foliaceous upper crest bisinuous, but not obliquely truncated and serrated at the apex; armed below with 10 spines in the inside. Posterior femora with a slight inferior foliaceous keel, tibiæ broadly constricted near the apex; tarsi as long as the tibiæ.

♀. Abdomen fusiform, simple or at most with the posterior angles of its terga acute.

Distribution. Indo-Chinese sub-region of the Oriental Region

95. *Ceratomantis saussurii*, Wood-Mason.

Ceratomantis saussurii, Wood-Mason, op. et loc. cit.

Oxyphilus saussurii, Id., P. A. S. B., 1879, p. 259.

♂ ♀. Head vertical, triangular, luteous, with a broad longitudinal brown band from the occiput up the back of the horn; the whole vertex prolonged upwards between the eyes into a tall forwardly-inclined horn; this is divided at the apex by an acute-angular notch into two unequal subacute points, bears two pairs of short conical spines, one posteriorly on its swollen base, and one anteriorly on its sides about midway between the basal pair and the bifid apex, and, as seen from in front, appears narrower between the lateral spines and the apex than between the lateral and basal spines; behind, it is smooth and transversely convex, but, in front, is furnished with three longitudinal ridges, two lateral, fine, continuous with the outer rims of the apical points, and one median coarser, gradually decreasing towards the apex and at about the end of the second third of its length bifurcating so as to form a tuning-fork-like figure, the two prongs of which pass into the inner rims of the apical points; the supero-posterior surface of the lateral lobes of the vertex is raised into a huge regularly conical tubercle, which is directed backwards and slightly outwards and upwards; each of the two posterior stemmatal eminences is prolonged upwards into a slender forwardly inclined conical spine; clypeus and facial shield strongly roof-shaped longitudinally; the latter which is transverse-pentagonal, prolonged upwards at base into a spine, which is parallel to the stemmatal spines; the ridge line, as seen in profile, in both bilobed, and in the latter separated off from the basal spine by a notch.

The pronotum is pale brown with a double longitudinal discal dark brown band, the two halves of which diverge from one another in the region of the spines, up the sides of which they run; it is divided by a deep transverse groove into two lobes, the anterior of which is slightly the longer, and each of which bears nearer

to the middle line than to the lateral margin a pair of huge divergent conical spines. The anterior lobe is semioval; it is armed at the posterior end of its lamellar margin with a large spine, which is succeeded by a decreasing series of three or four much smaller ones; its disk is marked by a longitudinal groove and bears the usual V-shaped wrinkle behind and at the sides of the two big spines; and its anterior margin is smooth and symmetrically bisinuous, being slightly emarginate in the middle. The posterior lobe is traversed by a longitudinal groove; crossed posteriorly by a groove, which runs to the posterolateral angles; it is expanded at the sides in front into a truncate-rounded supracoxal dilatation with the angles of the truncation produced into a sharp spine; it is separated from the anterior lobe by a small rounded emargination; and it bears at its posterior margin a pair of obliquely elongated low tubercles; its lateral margins are armed with a small spine on the anterior edge, two or three minute spinules between the two large spines, and three small spines in a decreasing series commencing at the posterolateral angle on the posterior edge, of the supracoxal dilatation, on each side; the posterior margin is truncate-rounded.

♀. Organs of flight abbreviated, extending little if at all beyond the end of the 7th abdominal tergum.

Tegmina subparallel-sided, broadest across the conjoined anterior and posterior areæ; marginal field to the posterior radial with the stigma pale straw-yellow by reflected light, ground-glass-like by transmitted light, largely and indistinctly reticulate in the basal third, beyond which it is traversed by oblique straight and simple veinlets, which are common to it and to the mediastinal cell; the rest of the organ pellucid, perhaps with a touch of yellow in life, with rich pellucid dark brown spots and streaks, namely, a streak across the base of the plicata half-way along the dividens, a large subquadrate spot at the base of the stigma, and a series of streaks radiating from the apex of the stigma along the veins, of which that along the posterior prong of the posterior radial is the most extensive and the most conspicuous; stigma large, subtriangular, extending from the posterior radial a little way into the cell between anterior and posterior ulnar in the transverse and about two-thirds as far in the longitudinal direction; the basal space bounded in front by the anterior radial, externally by the quadrate brown spot, and behind by the v. dividens, concolorous with the stigma, of which it is perhaps a part, being connected therewith by a narrow slip of wing-membrane of similar colour, texture, and structure; anterior radial simple and unbranched, recurved at the extremity so as to form the apex of the organ; posterior radial forked at the base of the stigma, thus furnishing two sectors, the anterior of which reaches the margin somewhat behind the apex; the anterior ulnar emits a single branch just before the commencement of the quadrate brown spot,

thus also furnishing two sectors, both of which are rather strongly recurved, especially the posterior; the *v. divicens* either attains the margin quite close to the posterior ulnar or just fails to do so, but in either case contributes to the coarse reticulum into which the *v. plicata* and its two branches are resolved all along the anal margin, which is more than half the length of the whole posterior margin and is strongly convex and forms with the small reticulate anal gusset an almost unbroken curve; two rows of large quadrate cellules in the three intermediate cells of the radio-ulnar area.

Wings rather more than one-and-a-half times as long as broad, pellucid with a touch of yellow, iridescent, with the somewhat opaque anterior margin and the veins yellowish and the veinlets colourless; anterior area extending by about one-tenth of its length beyond the posterior, a distinct though shallow anal emargination resulting; anterior ulnar 2-branched, the first branch arising just beyond the middle and the second midway between the first and the apex; *v. plicata* forked just before the origin of the first branch of the anterior ulnar; two rows of large cellules forming by their junction more or less complete false veins in the cells of the posterior area.

♂ ♀. Forelegs luteous with obsolete brown cross bars: coxæ armed on the basal half of the upper crest with two or three minute spinules bearing a minute seta on their distal margin, and, exterior to these, at the very base, with a stout bluntish conical spine directed towards the setting-on of the limb; on the inside polished, with a broad jet-black band extending from its base nearly to the end of the basal half of the trochanter: femora triangular, above foliaceously expanded, with the expansion widest at the junction of the second and the apical thirds of its length and bisinuous and entire at its free margin; armed below on the outer edge with 4 strong spines and on the inner with 10 strongish alternately longer and shorter ones (exclusive of the spines of the apical lobes, which are strong and curved boldly forwards), and on the disk with 4, of which the first and fourth are small and less than half the size of the second, and the second is little more than half the third, which is long and strong: tibiæ armed on the inner edge with 7 spines, and on the outer with 9, the three basal of which are short stout and stubby and perfectly decumbent, and the next three less so. Remaining legs furnished with genicular spines, luteous, with 3 brown rings on the femora: these subobclavate, above terete, below furnished with a slight lamellar carina expanded at base into a slight lobe, as in *Hestias brunneriana*; subequal to the tibiæ, which are terete, broadly and shallowly constricted near the apex; 1st tarsal joint long, about equal to the four succeeding joints taken together.

♀. Total length from front of head to end of abdomen 23 mil-lims.; height of head, from free margin of labrum to apex of horn,

6·2; length of pronotum 4; breadth at supracoxal dilatation 3·4; length of tegmina 12·6, breadth 4·5, of marginal field ·75; length of wings 11·2, breadth 6·9; breadth of abdomen 4·5; length of fore coxa 5·75, femur 6·25; of intermediate femur 4·5, tibia 3·8, tarsus 4·5, of posterior femur 5·0, tibia 5·0, tarsus 5·0.

Habitat. Pegu and Tavoy.

No. $\frac{1258}{1}$. An adult female, in spirits, from Pegu (*S. Kurz*). Presented by J. Wood-Mason.

Nos. $\frac{5034}{9}$ $\frac{5036}{9}$. Two nymphal females, and one nymphal male, dry, from Woomdwin 20—30 miles south of Mitha in the valley of the Tennasserim River, Tavoy, on the Siam boundary. Collected and presented by W. Doherty, Esq.

Pl. II, Fig. 3, head and pronotum, from above, of a nymphal female, $\times 5$; 3a, head of the same, from in front, $\times 5$; 3b, head and pronotum of the same, from the left side, $\times 5$; 3c, left fore-leg of the adult female, from the inside, $\times 5$.

Pl. III, Fig. 2, organs of flight of the left side, $\times 2\cdot25$.

Genus 28. *PACHYMANTIS*, Saussure.

Paraorypilus (*Pachymantis*), Saussure, Mém. Orthopt. 1870, t. i., p. 306, ♂ ♀.

Pachymantis, Id., op. cit. 1872, t. ii, p. 77, et Westwood, Rev. Mant., 1889, p. 22 (*ex parte*).

♂ ♀. The vertex is prolonged upwards at its anterior end into a short conical spike-like simple horn, which is flat or subexcavate in front, and externally and posteriorly thereto is furnished with a pair of small conical points, which answer to the lower pair of spines in the two preceding genera; its lateral lobes are only indistinctly subconically inflated; the occiput is strongly concave and forms with the vertex a sharp angle; two posterior stemmata unarmed; clypeus unicarinate with the carina produced forwards at base into a blunt spiniform tubercle; facial shield transversely pentagonal, obliquely bicarinate, with the basal angle produced like the clypeus.

Pronotum with a pair of huge conical spines on the anterior lobe and four similar ones, forming with the acute-angular supracoxal dilatations a crown of six, on the longer posterior lobe, the posterolateral angles of which are produced into a long spiniform process.

Organs of flight ♀ abbreviated, ♂ complete: tegmina ♂ parallel-sided, hyaline, with the longitudinal veins nearly straight and not distant, longer or shorter false veins between them, and the cellules oblong, the posterior radial simple and unbranched, the false vein between it and the lower branch of the forked ante-

rior radial running to the apex, the anterior ulnar 3-branched, with the first branch forked at the level of the abbreviated dividers, the v. plicata produced to the point in the posterior margin where the dividers would end if produced far enough, and its two branches broken up into a reticulum along the anal margin; stigma long, linear, lying obliquely across the radio-ulnar interspace upon the posterior radial and anterior ulnar veins; ♀ oval, pellucid, coloured, with the arrangement of their chief veins the same, according to DeHaan's description: wings ♂ hyaline, anterior area extending by about one-sixth of its length beyond the posterior, anal emargination very distinct, anterior ulnar 2-branched, plicata forked; ♀ quadrant-shaped, pellucid.

♂ ♀. Fore femora armed with 9 spines below on the inner edge, their lamellar upper crest arched but not obliquely truncated and serrated at the apex; posterior femora with genicular spines and a slight lamellar ridge below; tibiæ terete, broadly constricted near the apex; tarsi as long as the tibiæ.

Abdomen simple, "♂ widening somewhat towards the posterior end, ♀ very short, broadest at the middle."

Distribution. Malayan sub-region of the Oriental Region.

96. *Pachymantis bicingulata*, (DeHaan).

Mantis (Oxypilus) bicingulata, DeHaan, Bijdragen, etc. Orthopt. 1839-44, p. 86, pl. xvii, fig. 6 ♀, fig. 7 ♂.

Paraoxypilus (Pachymantis) bicingulatus, Saussure, Mél, Orthopt. 1872, t. i., p. 306.

Pachymantis bicingulata, Id., Op. Cit. 1872, t. ii, p. 77.

Oxypilus bicingulatus, Wood-Mason, P. A. S. B., 1879, p. 259.

♂. Head piceous, appearing somewhat agrioniform when viewed from above, triangular from in front; anterior end of median lobe of vertex prolonged upwards in the middle line into a short conical spike-like horn, the front face of which is vertical and flat with an indistinct raised margin, and the posterior sloping and transversely convex; externally and posteriorly to the horn the submedian lobes bear a pair of minute setulose pale conical points; the lateral lobes of the vertex are subconically somewhat swollen posteriorly; the occiput is concave, its junction with the vertex acute; the facial shield is transversely pentagonal with a coarse and obtuse raised rim to its lateral and basal margins, the latter of which is produced in the middle line into a conspicuous projecting pale conical spine, and with two correspondingly coarse and obtuse oblique carinæ on its disk; the clypeus is longitudinally carinate, the carina terminating at the basal end in a spine, which closely matches that of the facial shield in shape, colour, and direction; the eyes are very prominent, a little higher than wide.

The dark brown pronotum "is divided transversely by a deep groove into two elevations, the anterior of which bears two sharp spines on the middle of the back, and the posterior six [= 4 spines with the supracoxal dilatation of the two sides] similar spines, arranged in the form of a crown;" between the latter and the posterior margin a second and shallower groove crosses the pronotum, extending to the posterolateral angles; these are produced downwards and backwards into a long spiniform process, so as to form a very deeply concave sinus on each side of the posterior margin, near to which on the upper surface lies the usual pair of low tubercles; the deeper of the two grooves that cross the pronotum corresponds to the division between its two lobes, the anterior of which is rather the longer of the two; the basal portion of the anterior lobe is parallel-sided with the edges armed with four teeth, the apical portion, which is a segment of a circle rather less than a semicircle and is very slightly truncate anterolaterally on each side, is smooth-edged; in the posterior lobe, the front margin of the acutely and prominently triangular supracoxal dilatation, which meets the basal margins of the anterior lobe almost at right angles, bears one very minute tooth, the hinder margin, which is separated from the spiniform posterolateral angles by a rounded emargination, two minute teeth, and the spiniform posterolateral angle also two minute teeth on its front margin.

Organs of flight complete, almost perfectly pellucid and hyaline by transmitted light, subiridescent, faintly washed with lutescent by reflected light, with the marginal and mediastinal cells and the apex rather more obscured by the same colour when spread in the dried insect, but probably somewhat glistening, greyish white-brown, when closed in the living insect. Tegmina parallel-sided; the longitudinal veins scarcely curved and not distant, with longer or shorter false veins and two rows of oblong cellules between them; the mediastinal vein reaches the costal margin at about the junction of the second with the apical third of the length of the organ and, with the anterior radial, gives off to the costal margin oblique veinlets, which are broken up into a confused network in the basal fourth of the organ, beyond which they are simple, or rarely forked; the lower prong of the anterior radial reaches the apex; the simple and unbranched posterior radial is connected obliquely with the anterior ulnar by the long linear stigma, which is concolorous with the wing-membrane; the anterior ulnar vein is 3-branched with its first branch forked at the level of the termination of the *v. divdens*; the *v. divdens* is abbreviated, abruptly forked at less than half the way towards the posterior margin, its prongs running, the one into the posterior ulnar, the other into the *v. plicata*, which is simply forked close to the base in the one tegmen, abnormally 2-branched in the other, and terminates on the

margin at the point where the dividens would end if produced far enough, its one or two branches being broken up along the posterior margin into a somewhat meagre reticulum. In the wings the first four veins are all simple and undivided, but the fifth or anterior ulnar emits two branches, the first about the middle of the organ and the second a little later, and the v. plicata is forked about as much before as the anterior ulnar branches for the second time after the middle.

In the forelegs, the coxa is armed with one or two minute setiferous spinules on the basal half of its upper crest, and, external thereto, at the very base, with a short stout blunt mammilliform spine pointing towards the insertion of the limb; it is luteous at the base, the remainder being jet-black on all sides: the femora are luteous marbled with dark brown on the outside, vinous on the polished inner face; their foliaceous upper crest is broadest in the middle of its length; they are armed below on the outer edge with 4 strong spines, on the inner with 9 (exclusive in each case of the spine of the apical lobe, which is strong and boldly curved forwards), and on the disk with 4, the third of which is long and strong, by far the longest of all: the tibiæ are luteous with three incomplete dark-brown rings, armed below on the inner edge with 7 spines, and on the outer with 8, the basal five of which are decumbent: the spines of the subchelæ are all dark brown, those of the inner series paler than the outer. The posterior legs are luteous with three rings on the femora, four on the tibiæ, and one at the tip of each tarsal joint, dark brown.

Abdomen wanting.

Total length 20 millims., of pronotum 4, breadth 3; length of tegmina 21, breadth 6, of marginal field 1; length of wings 19, breadth 10·5; breadth of abdomen 4; length of fore coxa 5·0, femur 5·2; of intermediate femur 4·0, tibia 3·75, tarsus 3·75, of posterior femur 4·5, tibia 4·5, tarsus 4·5.

Habitat ♂ ♀ Batang-Singalang (*DeHaan*) and ♂ Bantam, Java.

No. ⁶⁴⁴⁹₁. An adult male, in spirits, from Bantam, Java (*H. O. Forbes*). Purchased.

Pl. II, Fig. 2, head of an adult male, from in front, $\times 9$; 2a, the same, from behind, $\times 9$; 2b, left foreleg, from the inside, $\times 5$.

Pl. III, Fig. 2, organs of flight of the left side, $\times 2\cdot25$.

Genus 29. TRIÆNOCORYPHA, Wood-Mason.

Triænocorypha, Wood-Mason, Ann. & Mag. Nat. Hist. 1890, ser. 6, vol. v, p. 439.

Head armed with three slender conical horns, two paired, arising posteriorly from the submedian lobes, and one unpaired

ed, anteriorly, from the middle of the anterior end of the median lobe of the vertex; facial shield transverse.

Pronotum armed on each of its two lobes with a pair of spines similar to, but taller than, those which form the cephalic horns; its supracoxal dilatation prominently triangular.

Posterolateral angles and sides of the 7 basal abdominal terga produced downwards and backwards into long, externally concave, and slightly curved spines, the longest of which is about two-thirds and the shortest about one-third as long as the fore femur.

Fore femora lamellar, oval, about twice as long as broad, armed below on the outer edge with 4 spines, on the inner with 5, exclusive in each case of the spine of the apical lobe, and on the disk with 2 only, the first of which, answering to the basal one of the series in *Oxyphilus* and its allies, is the larger, and the second, answering to the apical of the series in the same genus, is much the smaller, the two intermediate discoidal spines being absent; tibiæ armed below on the inner edge with 6 spines, and on the outer with 1 only—that immediately below the insertion of the tarsus—the remainder of the series being represented by a just perceptible undulation of the edge: posterior femora furnished with a narrow foliaceous inferior carina; tibiæ broadly and shallowly constricted near the apex; first joint of the tarsi longer than all the rest taken together.

Founded on a very young larva.

Allied to the three preceding genera and to *Hestias*.

Distribution. The Malayan sub-region of the Oriental Region.

97. *Triænocorypha dohertii*, Wood-Mason.

T. dohertii, Id., Op. supra. cit. p. 440, pl. xvii, B. figs. *a-d*.

Young larva. Dark sepia-brown with a greyish white stripe along the concave outer faces of the 7 + 7 abdominal spines; two pairs of delicate filaments of uncertain nature at the extremity of the abdomen whity-brown; the forelegs uniform pale clear vandyke-brown; and the posterior legs greyish white, marbled with dark sepia-brown.

Total length 5.25 millims.

Habitat. Perak, Malay Peninsula.

No. $\frac{9800}{6}$. A very young larva, dry, from the above locality. Collected and presented by W. Doherty, Esq.

Genus 30. MYRCINUS, Stål.

Myrcinus, Stål, Syst. Mant. 1877, p. 21, ♀.—Westwood, Rev. Mant. 1889, p. 4.

Distribution. The Malayan sub-region of the Oriental Region.

98. *Myrcinus tuberosus*, Stål.

Myrcinus tuberosus, Stål, Syst. Mant. 1877, p. 46, ♀.—Westwood.

Rev. Mant. 1889, p. 30, ♂ ♀, pl. ii, fig. 2, ♀.

Habitat. Borneo (*Stål*); Sarawak (*Westwood-Wallace*).

99. *Myrcinus octispinus*, Stål.

Myrcinus octispinus, Stål, Syst. Mant. 1877, p. 47, ♀ nymph.

Habitat. Borneo (*Stål*).

Genus 31. *THEOPOMPA*, Stål.

Theopompa, Stål, Syst. Mant. 1877, p. 22.

Humbertiella, Saussure (*ex parte*.)

Distribution. The South-Indian and Ceylonese, the Indo-Chinese, and the Malayan subregions of the Oriental Region; the Austro-Malayan subregion of the Australian Region; and the West-African subregion of the Ethiopian Region.

100. *Theopompa ophthalmica*, (Olivier).

Mantis oratoria, Stoll, Repres. Spect. Mant. etc. 1787, pp. 19 et 77, pl. vi, fig. 23, ♀.

Mantis ophthalmica, Olivier, Encycl. Méth. Ins. 1792, t. vi, p. 637 (founded on Stoll's fig. and desc.)

Humbertiella ophthalmica, Saussure, Mém. Orthopt. 1870, t. i, p. 172, ♂ ♀ (*nec* Blanchard).

Theopompa ophthalmica, Stål, Syst. Mant. 1877, p. 48.

Habitat. Coromandel Coast (*Stoll*); ♀ East Indies, (*Saussure*); India (*Stål*).

101. *Theopompa burmeisteri*, (DeHaan).

Mantis burmeisteri, DeHaan, Bijdragen etc. Orthopt. 1839, p. 80, pl. xvi, fig. 3 ♀, fig. 4 ♂.

Humbertiella burmeisteri, Saussure, Mém. Orthopt. 1870, t. i, p. 174.

Theopompa burmeisteri, Westwood, Rev. Mant. 1889, p. 4.

Habitat. Java (*DeHaan*); Sarawak, Borneo (*Westwood*).

102. *Theopompa servillei*, (DeHaan).

Mantis servillei, DeHaan, Bijdragen etc. Orthopt. 1839, p. 81, pl. xvi, fig. 5, ♂, 6, ♀.

Humbertiella servillei, Saussure, Mém. Orthopt. 1870, t. i, p. 172; 1872; t. ii, p. 17, ♀.

Theopompa servillei, Stål, Syst. Mant. 1877, p. 48.

Habitat. Lewibonger, Java, at 300 feet elevation (*DeHaan*); Java (*Stål*); Ceram (*Saussure*); and Mergui.

The locality (Sangor, Central India) given by Westwood (Rev. Mant. p. 4) for this species requires confirmation.

No. $\frac{5550}{9}$. An adult male, dry, from Chaung Tanong, Mergui. Collected and presented by T. H. Hughes, Esq.

103. *Theopompa testa*, Stål.

Theopompa testa, Stål, Ofvers. K. Vetensk. Acad. Förhand. 1877, no. 10, p. 38.

Habitat. Philippine Islands (Stål).

104. *Theopompa blanchardi*, Wood-Mason.

Mantis ophthalmica, Blanchard, Voy. Pôle Sud, l' Astrolabe et la Zélée, Zool. 1853, t. iv, Ins. p. 354, Ins. Orthopt. pl. i, fig. 6, ♀ (nec Olivier.)

♀ *Humbertiella ophthalmica*, Saussure, Mém. Orthopt. 1871, t. i, p. 398, ♀ var.

The colour of the wings in nature is, as depicted and described by Blanchard, "noir bleuâtre, comme l'acier passé au feu" by reflected, deep smoky-quartz-brown by transmitted light.

Habitat. Amboina (Blanchard); Ceram (Saussure).

105. *Theopompa taprobanarum*, n. sp.

♀. Of moderate size. Reddish testaceous brown mottled with dark fuscous, presenting a perfect protective resemblance to the bark of a tree or to dead and rotting leaves.

Facial shield arched in the middle and prominent at the base, wrinkled at the sides and presenting three faint round calli, two near the base and one near the apex of the middle part of its disk.

Pronotum granulated and mesially grooved, especially in the middle of its length; the median and anterior boss of its anterior lobe is transversely wrinkled on each side of the middle line and is sharply separated off from the prominent posterolateral granulated bosses by a V-shaped groove, which curves forwards and outwards from the median and supracoxal grooves; its posterior lobe bears at its hinder end a pair of prominent conical bosses corresponding to the first, a pair of elongated sparsely granulated flat topped ones corresponding to the third, and a third much smaller obsolescent pair corresponding to the fourth, but none corresponding to the second, of the four subdorsal pairs of bosses present in *Humbertiella indica*, and external to and slightly in front of each of the two last pairs on each side a granulated elevation answering to the two distinct pairs of bosses usually traceable in the same position in *H. indica*; its

margins are slightly sinuous, not evenly arched, and finely and decreasingly denticulate from the salient anterior angles to the base, which, like the anterior margin, is smooth. Length : breadth :: 1.6 : 1. Prosternum of a leaden tinge.

Organs of flight, when closed, in the dried insect, scarcely extending beyond the end of the abdomen. Tegmina with the first branch of the anterior ulnar vein simple, but the marginal field not remarkably broad; tolerably broad, parallel-sided, oval, densely reticulated, opaque, coriaceous, of a reddish brown colour, irregularly mottled with dark fuscous of varying depth, a patch of the light ground-colour remaining unmottled around the linear concolorous stigma, in the radial area, and of a black-brown colour with green and blue reflections by reflected light, of a dark smoky-quartz-colour by transmitted light, in the membranous anal gusset.

Wings almost entirely black-brown by reflected light; anterior area opaque, semicoriaceous, dull black-brown by reflected light, with the extremity of the anterior margin and the apex coloured like the tegmina; scarcely produced beyond the posterior area, with a correspondingly slight anal emargination; posterior area black-brown with brilliant green and blue interference colouring by reflected light, very dark smoky-quartz-colour with very narrow hyaline edgings to the cross veinlets by transmitted light.

Anterior legs robust; coxæ red, somewhat polished, and covered with small yellow spiniform setiferous granules on the inside, their upper crest armed with five yellow slanting setiferous spines with some minute spinules between them, the two lower crests distinctly spinulose; femora, which may or may not have two dark brown cross bands on the outside, have the upper, middle, and lower crests of their outer side denticulate, with some of the teeth or granules on each black-brown as usual, their inner face marked with shining black-brown spots, the first oblong, the largest of all, extending from the level of the second discoidal spine, through the ungual groove, to that of the sixth of the marginal spines, along which it gives off processes, and occupying about $\frac{1}{3}$ of the width of the joint, the second, opposite the first, next to the upper margin, about half the size, the two coinciding with the proximal of the bands that may be present on the outside, and the third between the femoral brush and the upper margin, coinciding with the distal of the external bands; tibiæ, which may or may not be distinctly 3-annulated and are always blackish internally, are armed on the inside with a series of 11 regularly decreasing black spines, and on the outside with 8 brown black-tipped spines in two series, an apical one of five and a basal one of three, the first of which is longer than the last of the apical series, and all of which are much wider apart than those of the apical series from one another.

Posterior femora either so coarsely and closely mottled with black-brown that none of the pale brown ground-colour can be seen or marked with three cross bands on the apical half and spotted at base, below testaceous. Posterior tibiæ black-brown with two narrow pale brown rings. All the tarsi black-brown with a single brown ring on the first, second, and fifth joints.

Abdomen broad flattened and oval, above dark fuscous broadly margined at the sides and extremity with red brown, below testaceous concolorous with the under surface of the posterior femora and coxæ.

Total length 47 millims; breadth of head between eyes 9.0 length of pronotum 12.0, of which the anterior lobe is 4.25 and the posterior 7.75; greatest breadth 7.5; length of tegmina 26.5, breadth 11.4, of marginal field 2.75; length of wings 21.5; breadth 17.75; length of anterior coxa 10, femur 15, tibia 11.5, tarsus 11; of intermediate femur 13.5, tibia 11.5, tarsus 9; of posterior femur 14.25, tibia 15.5, tarsus 11.

♂. Unknown.

Habitat. Ceylon.

No. $\frac{9432}{6}$. An adult female, dry, from Ballangoda, 25 miles beyond Ratnapura forest, Ceylon (*A. Italy*). Presented by the Trustees of the Colombo Museum.

The described and figured specimen.

No. $\frac{4572}{4}$. An adult female, dry, from Ceylon. Collected and presented by F. M. Mackwood, Esq.

Pl. I, Fig. 1, pronotum, from above, $\times 5$.

106. *Theopompa septentrionum*, n. sp.

♀. Pronotum longitudinally grooved, arched in the middle and slightly emarginate at each side of its front border; its anterior angles rather greater than a right angle and very finely denticulate-granulate; its lateral margins obsoletely granulated and, except for a slight emargination just behind the anterior angles, evenly arched; the short median and anterior boss of its anterior lobe transversely wrinkled on each side of the middle line, distinctly separated off by a V-shaped impression from the posterolateral bosses, which are raised anteriorly into a curved prominent obsoletely granulated ridge; posterior lobe with four well-developed pairs of bosses arranged on each side of the middle line, and in two pairs, the anterior one of which is bilobed, external to and in front of the two anterior pairs of median ones, all sparsely-granulated; of these bosses the posterior pair is blunt mammilliform and the third pair is rather more than double the size of the fourth, which is the smallest of all. Length : breadth :: 1.3 : 1.

Organs of flight not quite reaching to the extremity of the abdomen, the ovipositor being exposed when they are closed; dark-coloured, opaque. Tegmina opaque, semicoriaceous, dark umber-brown brightly varied with whity-brown of a fleshy or violet tinge; the umber-brown being greatly intensified about the forked first branch of the anterior ulnar vein and again about midway between this and the apex of the organs, the tegmina have an obliquely banded appearance; the stigma is placed in the midst of an oval spot of whity-brown surrounded by dark brown, and four or five dashes of whity-brown on each of the longitudinal veins beyond are rendered no less conspicuous by their dark brown surroundings; the gusset-like portion of the anal area has its meshes fuscous and its net-venation whity-brown very narrowly lined with hyaline. Below, the tegmina are suffused throughout with red violet, giving to all the lighter coloured parts except the whity-brown dashes a bright pink colour and to the darker parts a purplish tinge. Ulnar vein forked at its basal third, with the upper prong in the one tegmen forked at the middle of its length and simple in the other.

The wings have the anterior area produced only a little beyond the posterior and a distinct but shallow emargination between the two areæ; their anterior area is dull opaque very dark purplish umber-brown, with the outer half of the anterior margin and the apex coloured like the tegmina, and with the transverse veins of the apical half lined with hyaline; their posterior area dark smoky-quartz-colour by transmitted light, black with a dull green bronzy gloss by reflected light.

The abdomen, which is broadly oval and has the lateral margins of its 4th—6th sterna expanded and rounded and produced beyond the level of the terga so as to be visible from above, is dark umber-brown above, except in the middle two-thirds of its four basal segments, where it is polished fuscous, lighter below.

Forelegs moderately robust, on the outside concolorous with the head, pronotum, and upper surface of posterior legs, on the inside luteous concolorous with the sternal region of the thorax and the coxæ and the under surface of the our posterior femora.

Coxæ armed on the upper crest with 4—6 small setiferous spinules with very minute ones between them, outer crest also spinulose; outer surface with a dark brown streak just below the upper crest; inner surface obsoletely and sparsely granulose, with a dark brown or black line in the apical groove; femora on the outside obsoletely spotted, marginal crests not very salient, armed and ornamented as usual; marked on the inner surface with a black spot in the unguis groove and a straight linear black streak extending from the level of the fifth inner marginal spine to near the apex and connected with the black femoral brush immediately above the level of which it lies; the picture of the inside of the femora is in fact identical with that of typical

specimens of *H. indica*; tibiae armed on the outside with 9 teeth and on the inside with 10. Four posterior legs reddish testaceous spotted and annulated with dark umber-brown, as in the preceding species.

Total length 43·5 millims.; length of pronotum 9·0, of its anterior lobe 3·25, of its posterior lobe 5·75, greatest breadth 6·75; length of tegmina 6·0, breadth 10·25, of their marginal field 2·0; length of wings 22, breadth of wings 14·5; length of anterior coxa 8·25; femur 11·0, of intermediate femur 11·0; tibia 8·5, tarsus 8, of posterior femur 12·0, tibia 14·0, tarsus 10, breadth of abdomen across 4th somite 14.

♂. Unknown.

Habitat. Sibsagar, and Samaguting, Assam.

No. $\frac{6084}{1}$. An adult female, dry, from Sibsagar, Assam. Collected and presented by S. E. Peal, Esq.

The described and figured specimen.

No. $\frac{4670}{4}$. An adult female, dry, from Samaguting, Naga Hills. Presented by the late Captain John Butler.

Pl. I, Fig. 3, pronotum, from above, $\times 5$.

